

new england

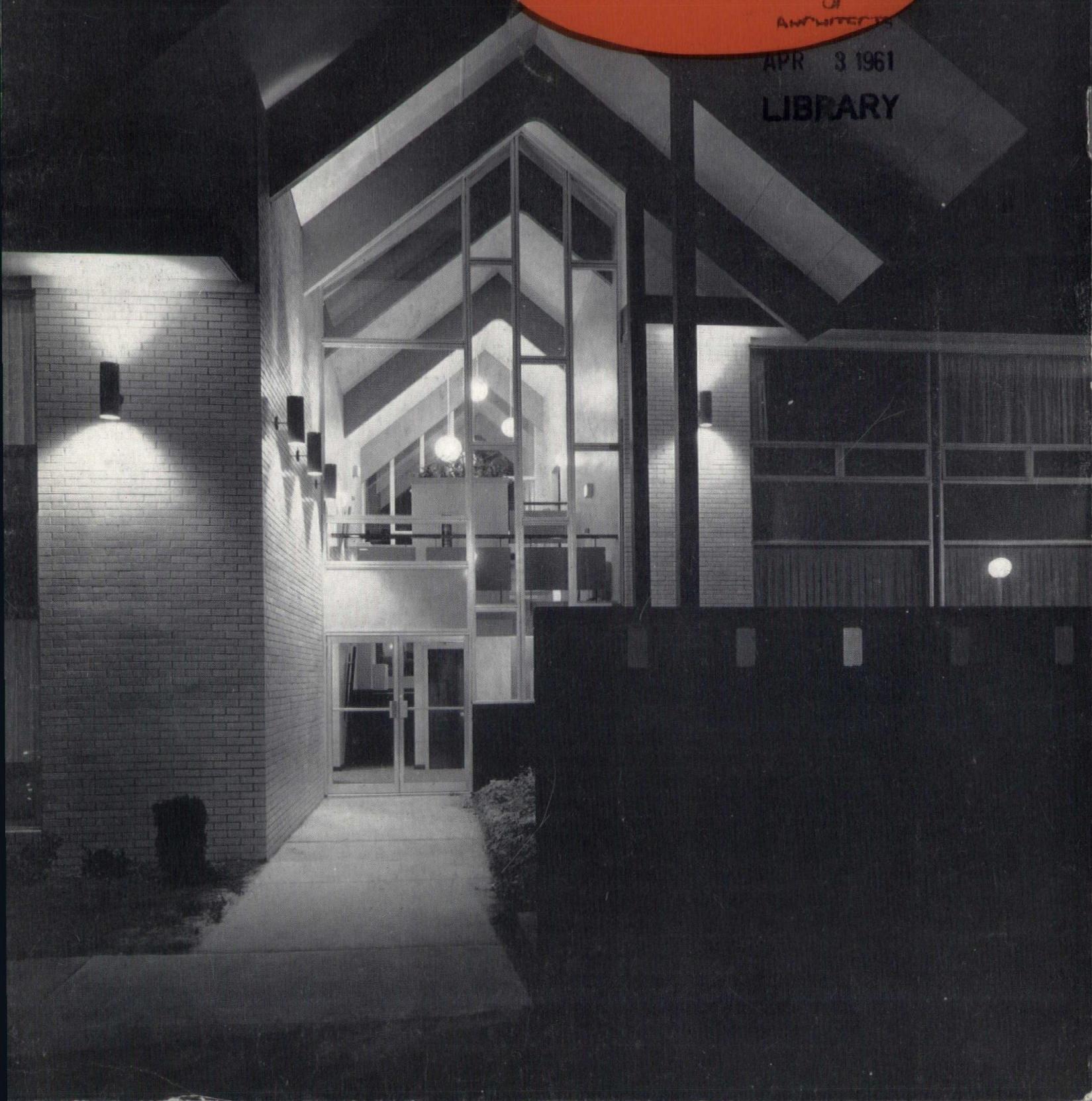
ARCHITECT & BUILDER

AMERICAN ILLUSTRATED

OF
ARCHITECTURE

APR 3 1961

LIBRARY





Montrose Products Co., Inc.
AUBURN, MASS.



Stop & Shop Perishable Foods Warehouse
SOUTH BOSTON, MASS.



Sugarman Bros., Inc.
MEDFORD, MASS.



**Modern Industry seeks
something more than
simply shelter . . .**

IT DEMANDS A HOME !

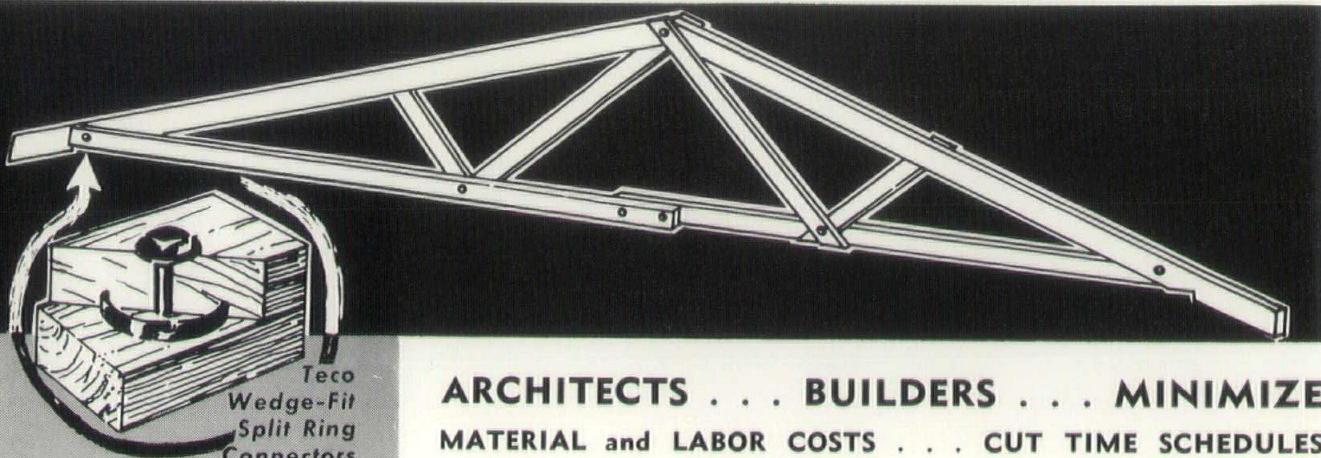
The drab, red-brick building on a back-street cinder lot has ceased to be adequate housing for progressive industry. Today any product, to be successfully marketed, must establish a consumer-image of reliability, prestige and dependability. This image originates in the manufacturing plant, for without pride in the industrial home, there can be little pride in the industrial product. Let darkness give place to light; grim walls to windows; inefficient housing to streamlined production space; and hold personnel change-over to a minimum. The end result — lowered production costs and increased profits!



U. S. Gear Corporation
WAKEFIELD, MASS.

LILLY
construction company

BOSTON, MASSACHUSETTS



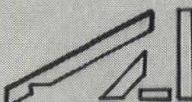
MONEY-SAVING **GROSSMAN** COMPONENTS



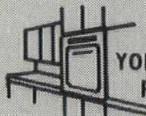
TRUSSES



GABLE ENDS



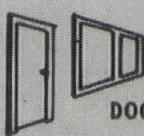
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RAFTERS & FRAMING



YORKTOWNE KITCHENS
PREWAY BUILT-IN
APPLIANCES



WALL PANELS



DOOR AND WINDOW
UNITS

**ARCHITECTS . . . BUILDERS . . . MINIMIZE
MATERIAL and LABOR COSTS . . . CUT TIME SCHEDULES**

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new england ARCHITECT and BUILDER, illustrated—NUMBER TWENTY-FIVE, 1961

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Signed Articles. As one object of the "New England Architect and Builder, Illustrated" is to afford a forum for the free expression of matters of importance relating to the building trade and architectural profession, and as the widest range of opinion is necessary in order that different aspects of such matters may be presented, the editors assume no responsibility for the opinions or facts in signed articles.

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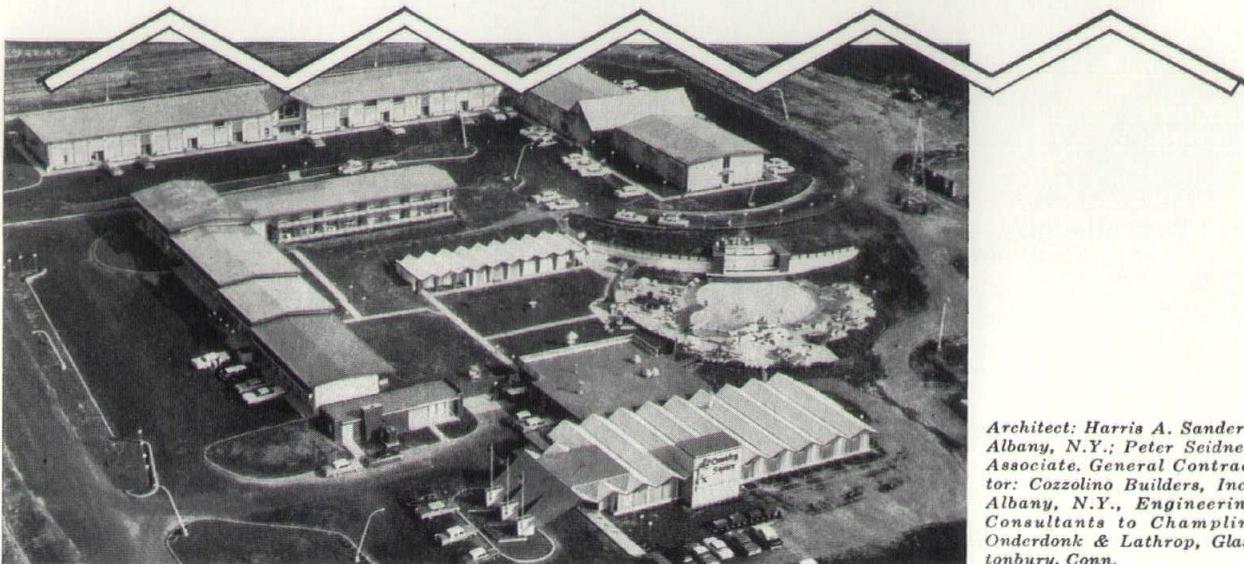
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The only regional publication designed for the promotional interest of Architects, General Contractors, Sub-Contractors, Builders, Engineers, and all others actively engaged in Building Construction within the (6) New England States.

POSTMASTER: Form #3579 requested to: "new england ARCHITECT and BUILDER illustrated", 215 Stuart St., Boston 16, Massachusetts.

...for speed, economy, and unusual designs

ROOF SYSTEMS by CHAMPLIN



Architect: Harris A. Sanders, Albany, N.Y.; Peter Seidner, Associate, General Contractor: Cozzolino Builders, Inc., Albany, N.Y., Engineering Consultants to Champlin: Onderdonk & Lathrop, Gladstonebury, Conn.

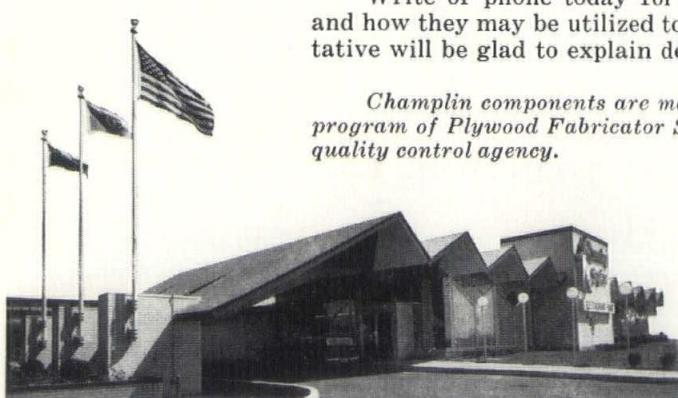
"Make it functional yet spectacular, have it ready in nine months, and keep costs down." Such was the challenge faced by architect Harris A. Sanders of Albany, N.Y., designer of the luxurious Country Squire Motel, one of the largest resort motels in the northeast located near Rochester, N.Y.

Specification of Champlin building components . . . stressed skin panels for floors and roofs, straight line laminated beams, plywood box beams, plywood arches for roof support, and members for the folded plate roof . . . proved a key move in completing the project on time with *one-fifth the manpower required for conventional construction.*

Thanks to a combination of factory fabrication and on-the-job assembly, components were ready as required and erected in record time despite mid-winter weather conditions.

Write or phone today for specific information on Champlin components and how they may be utilized to advantage in your next project. Our representative will be glad to explain design procedures and fabricating techniques.

Champlin components are manufactured under the rigid testing and inspection program of Plywood Fabricator Service, Inc., the industry's independent, impartial quality control agency.



▲ In addition to the speed and economy inherent in the component system, striking architectural effects can be achieved which set a structure apart as truly distinctive. Country Squire's folded plate roof, for example, is the largest of its kind ever built. 8' x 64' members cover a clear span of 50'.

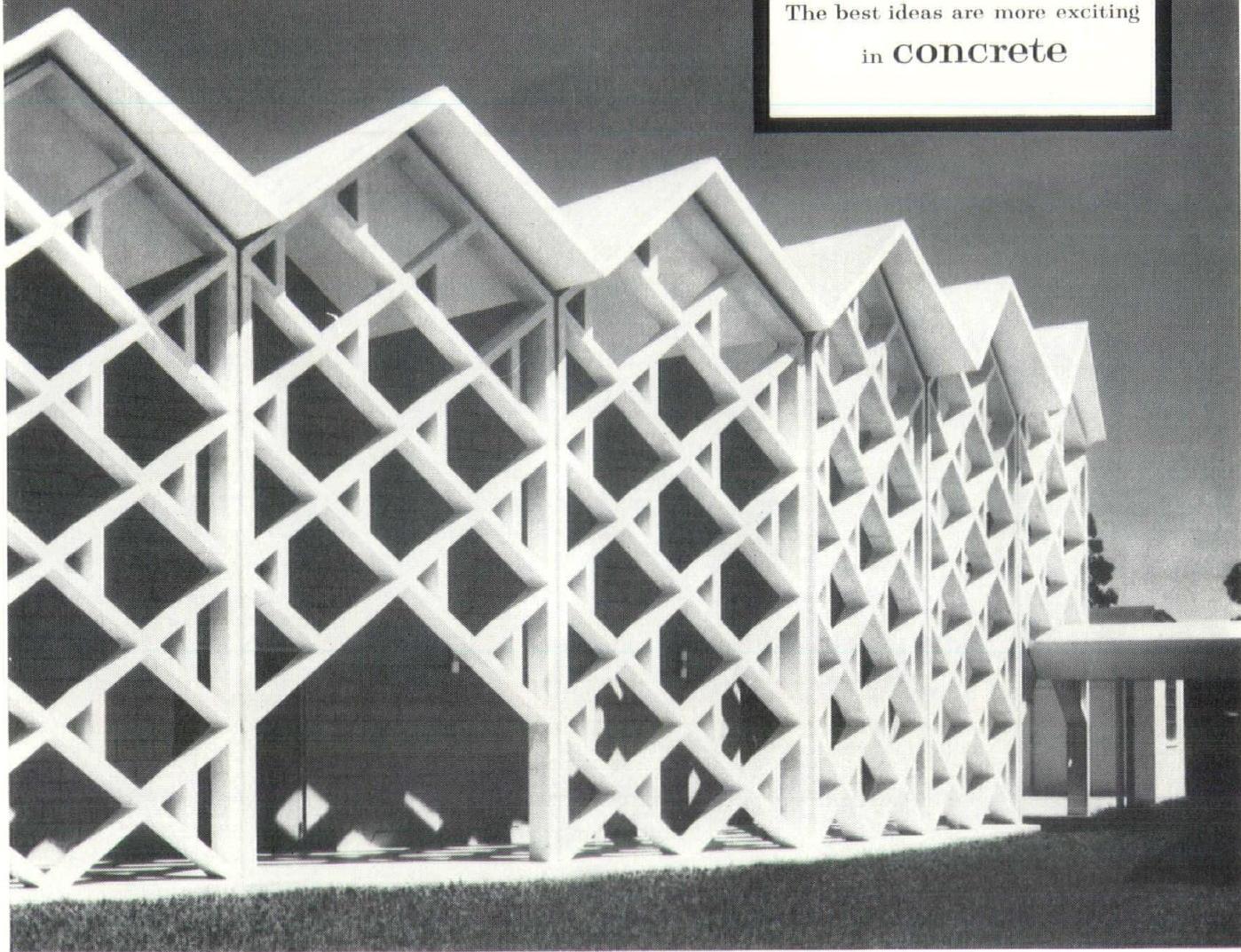
◀ Champlin components, scientifically designed and quality-built to rigid standards, give the high strength to weight ratio so important in many of today's jobs. Arch in the illustration (left) is constructed of built-up plywood units by Champlin.

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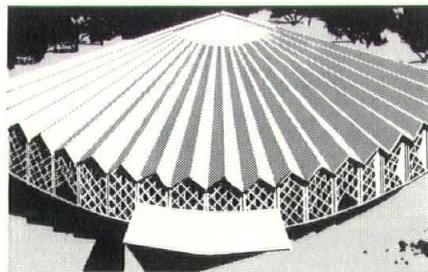
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The best ideas are more exciting
in **concrete**



Concrete "pleats" and precast "lace" create a temple of delicate beauty



From the air, it's a lacy, shimmering fan. Congregation B'nai Israel Synagogue of St. Petersburg, Florida. Architect: Frank G. Bonsey, St. Petersburg. Structural Engineer: Joseph C. Russello, Tampa, Florida. General Contractor: R. M. Thompson Company, Clearwater, Florida.

Only concrete could have inspired it. The serrated roof line and sunscreen façade bring to this contemporary house of worship a stimulating, yet reverent beauty.

And despite its dainty, fragile look, the structure is built to endure. All of concrete's lasting strength is there.

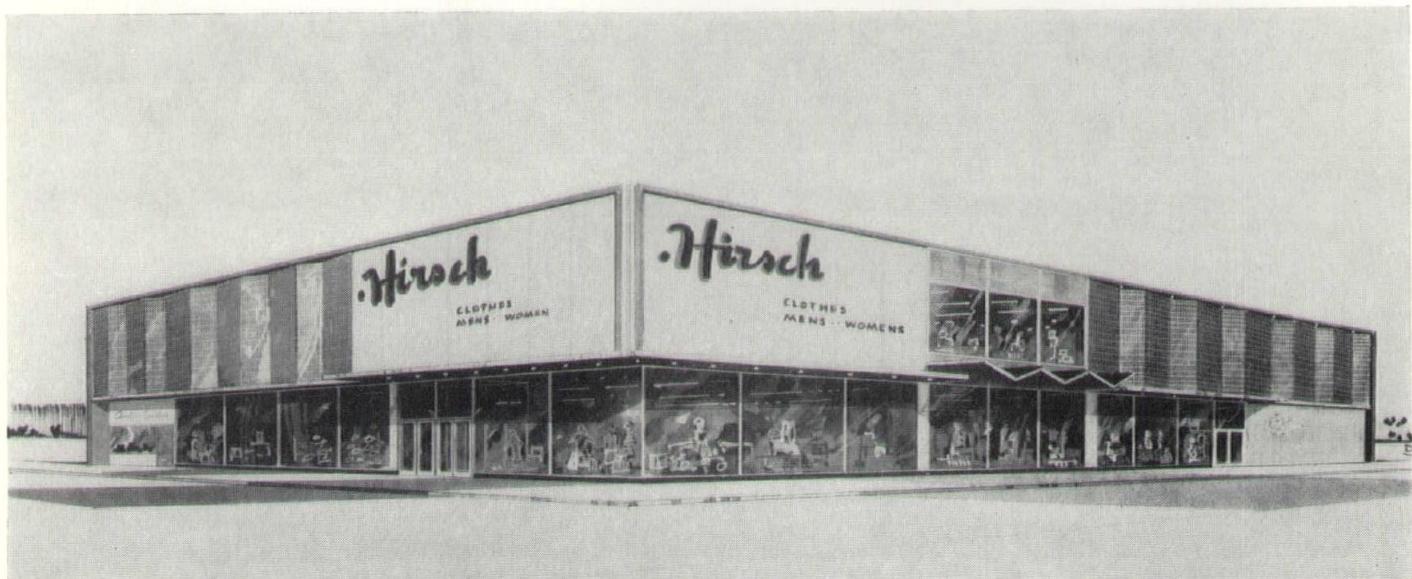
Today's architects find the versatility of concrete gives opportunity for design that is economically practical and dramatically different.

PORLAND CEMENT ASSOCIATION

20 Providence Street, Boston 16, Massachusetts

A national organization to improve and extend the uses of concrete

PREFABRICATED BRICK!



The recently-completed Hirsch Clothing Company store in Chicago is the first major commercial use of the "SCR building panel,"* a new prefabricated brick wall concept. The exterior wall contains 27 pre-assembled brick plate girders four feet wide and 19 feet high.

It would be logical to assume that any building materials producers who have been at their trade for the past 8,000 years have made everything there is to be made out of their raw materials. However, this is not the case with the manufacturers of brick. Although they have been making one of the world's oldest and strongest materials for man's shelter, they know that a long history alone is not enough to keep up with this modern world. That is why brick and structural tile manufacturers support a million-dollar research program centered in the Structural Clay Products Research Foundation in Geneva, Illinois. From these labs has come a new idea in masonry construction—a prefabricated brick wall.

Called the "SCR building panel,"** this prefabricated panel is made of the same brick which has provided shelter for man through the ages. Following extensive laboratory and field testing, the pre-fabricated panels were used successfully on a home, a small industrial building and, most recently, on a handsome Chicago clothing store.

The Chicago store, built for the Hirsch Clothing Company, made wide use of the new shop-fabricated brick panels. It was the first large scale use of the panels in a commercial structure.

The Hirsch building contains 2,052 square feet of individual brick panels incorporated into 27 pre-assembled "plate girders" four feet wide and 19 feet high. Each one of the plate girders contains 19 factory cast panels one foot wide and four feet long. The panels, which are steel reinforced, were fabricated with ceramic glazed structural clay units

ARCHITECTS
&
ENGINEERS

CAMBURAS & THEODORE

measuring 12 inches by two and one-quarter inches and two and one-half inches thick.

With the plate girders in place, they form a saw-tooth wall 19 feet high. The contrasting wall at the street corner is made of white glazed brick laid in a conventional manner.

The architects, Camburas and Theodore, AIA, originally specified a saw-toothed brick wall which, because of its 19-foot height, would have required a wall at least 12 inches thick to take the wind load. It actually would have been more than 16 inches thick at the points of maximum projection. However, the new reinforced "SCR building panel" was able to do the job with just a thickness of two and one-half inches.

One of the most important statistics in the description of this new kind of brick wall is the fact that the wall is **only two and one-half inches thick**. Although this is quite thin particularly when compared to a four inch or eight inch brick wall, tests show that such a wall assembly is more than adequate in resisting the required wind loads over a 19 foot vertical span.

The basic unit of the Chicago store's prefabricated brick wall is a two and one-half inch thick piece of



Brick wall going up! Workmen are easing into place a new prefabricated brick wall section four feet wide and 19 feet high on a Chicago store construction job. The reinforced wall section has just been lifted into place by a crane. The wall section, called a "plate girder," is part of the new research-developed "SCR building panel"*, which is just two and one-half inches thick.

hard-burned clay 12 inches wide and two and one-quarter inches high. The unit in Chicago happens to be an attractive shade of aquamarine ceramic glazed clay but research developments have shown that the "SCR building panel" can be made of any material which now appears in regular clay masonry and in any color currently in use. This would include brick, glazed or unglazed tile and architectural terra cotta.

First-time observers of the Chicago installation of "SCR building panels" were amazed to see how a brick wall can be erected these days. They were used to seeing the conventional style of brick masonry in which the construction of the wall is actually done on the very spot where the wall will be located. When trucks pulled up bearing brick wall sections four feet wide by 19 feet high, they were surprised to learn that the brick wall had already been "laid" by bricklayers back in the shop of the mason contractor.

Working with laboratory-developed equipment at the shop, the men quickly put the small clay units face down in a jig where they are ready for casting. Two slim metal reinforcing rods were placed vertically across the backs of the clay units and then a tough, quick-drying cement was poured over the whole back of the future panel. In just 15 minutes,

the cement was sufficiently hardened to permit its removal from the jig. In 24 hours, the panel reached full strength.

In the development of this prefabricated panel, the Structural Clay Products Research Foundation had the full cooperation of the Bricklayers, Masons & Plasterers' International Union and the Mason Contractors Association of America, both of whom have repeatedly shown their interest in new methods and products for clay masonry.

And what promise for the future does this new time-saving concept hold? The possibilities are many. The growing demands of the construction boom of the 1960's are being translated into schools, stores, offices, homes and a great variety of building needs of this exploding population of ours. The "SCR building panel" has a definite place in this boom. It can be made in the sizes, clay materials, textures and colors called for in any construction job. The Hirsch store in Chicago is the first in a new program by the brick and tile industry to make the "SCR building panel" available nationally in the next 12 months.

Use of the panel brings to modern construction all of the traditional qualities of strength, fire resistance, storm protection, low maintenance and beauty which have been a part of brick walls for the past 8,000 years. Through the wonders of modern industrial research, the brick industry has shown that its products have an important place on the construction scene of the 1960's and beyond.

Architects, like all professional men, are of value to the client only in terms of the sum of all their training, knowledge, and experience. A casual analysis of any group of buildings, construction, or project will indicate that those units which are favorable, pleasing in design, and time-tested are **not** products of mere chance.

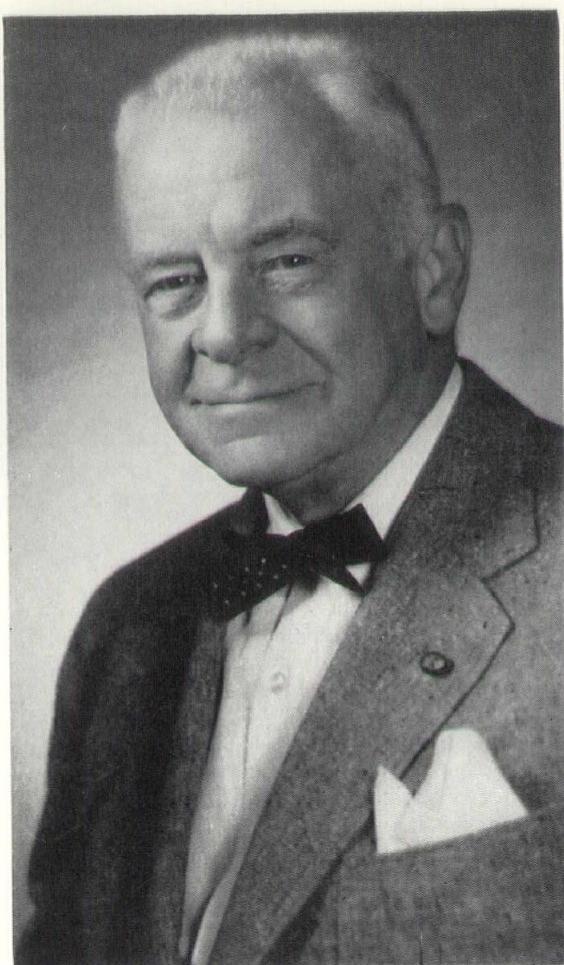
Since 1923 the office of William W. Drummeey has extended the required professional responsibility for a successful creative record. A graduate of Calvin Coolidge College, North-eastern University, and Massachusetts Institute of Technology, Mr. Drummeey has a unique background to serve his clients; this he has done on a wide scale.

"Colonel" Drummeey, as he is known by many of his associates, is a retired USAFR Colonel, former Special Lecturer at MIT, former Special Lecturer for the State Department of Education, former Head of School Buildings Department, former State Director of the Federal Housing Administration for Massachusetts.

In many directions, and for many years, Mr. Drummeey has continued to appraise himself and his staff of the importance of being "just a little bit more than an Architect." His feelings toward architecture may be expressed by the following quotation:

"In the architectural structure, man's pride, man's triumph over gravitation, man's will to power, assume a visible form. Architecture is a sort of oratory of power by means of force."

—FRIEDERICH NIETZSCHE



OFFICE OF WILLIAM W. DRUMMEY — Architect

The whole is as good as the sum of its parts. . . .

So it is that the office of William W. Drummeey is composed of first-class architects. Recently made partners in the firm are David W. Anderson and Richard C. Rosane.

Mr. Anderson received his A.B. from Amherst College in 1950 and three years later graduated from Harvard School of Design. During 1954 he was an Appleton Fellow, traveling in Europe. His architectural registrations include New York, Massachusetts, and the National Council of Architectural Registration Boards.

Prior to joining William W. Drummeey, Mr. Anderson was associated with firms in Ohio and New York where he gained valuable experience on industrial, commercial, religious, and educational projects.

Also a former Appleton Fellow, Richard C. Rosane has experience emphasis in collegiate architecture. As a graduate of Harvard University and Harvard Graduate School of Design, Mr. Rosane spent two years with a New York firm before associating with William W. Drummeey. He is registered with the Massachusetts Architects and is a member of AIA.

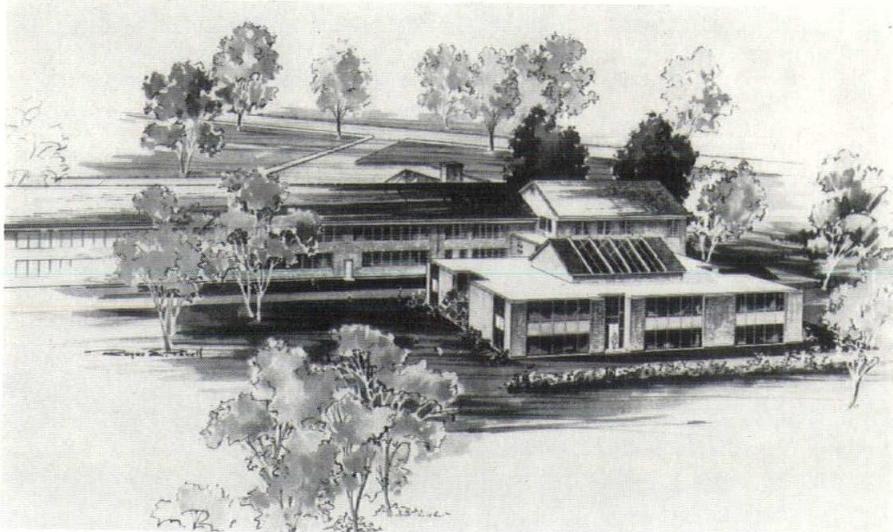


David W. Anderson



Richard C. Rosane

ADDITION TO JAMES F. PEEBLES ELEMENTARY SCHOOL



Engineers: Nickel-Borek & Associates, Inc., Boston

Consulting Electrical Engineers: Francis Associates, Marion

General Contractor: Peabody Construction Co., South Boston

Here are shown the plans for the ground and first floors of the addition to the James F. Peebles Elementary School. The 12 classrooms of the 2-story structure are grouped around a skylighted control space which is used as an

academic multi-purpose area. The addition is linked to the existing building by a glass enclosed corridor. Brick to match the existing is used with blue porcelain enamel panels.

The 16,500 sq. ft. structure,

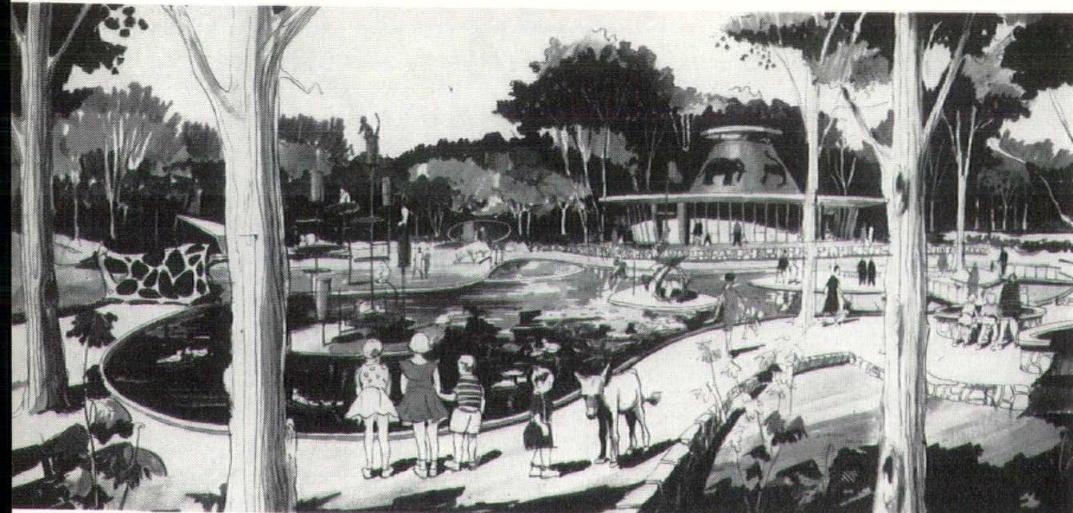
completed in 1960, has reinforced concrete foundation walls and spread footings. The exterior walls are faced with brick and backed with concrete block, while the interior walls are painted concrete block. The floors are of asphalt tile in the classrooms; rubber base terrazzo in the toilet areas. The addition has ceilings of acoustical tile panels in the classroom; tar and gravel roof, with translucent panels at the skylight.

PRINCIPAL SUB-CONTRACTORS AND MANUFACTURERS

Miscellaneous Metals—Security Steel & Wire Works, Somerville. **Caulking, Waterproofing, Dampproofing**—A. Belanger & Sons, Inc., Cambridge. **Roofing and Flashing**—Universal Roofing & Sheet Metal Co., Inc., New Bedford. **Resilient Tile and Terrazzo Floors**—Central Floor Covering Co., Providence, Rhode Island.

Acoustical Ceilings—Armstrong Contracting & Supply Corp., Brighton. **Glass & Glazing**—Mid-Cape Glass Corp., Hyannis. **Painting**—James J. Wilmot Co., Middleboro. **Curtain Wall Construction & Metal Windows**—Rusco Products of Massachusetts, Inc., Cambridge. **Plumbing**—Corcoran Plumbing & Heating Co., Inc., Brockton. **Heating & Ventilating**—Lyman & Baker, New Bedford. **Electrical**—Caron, Inc., New Bedford.

ANIMAL NURSERY—FRANKLIN PARK ZOO



This rather unusual construction, an animal nursery at the Franklin Park Zoo in Boston, situated among asphalt pavement, grass areas, and stone walls, is structured in five main parts.

The winter building consists of concrete slab on grade; steel frame with wood joists and plastic coated roofing; window wall exterior with vent sash and facing panels; concrete block interior walls with natural, glazed brick and plaster finishes; terrazzo floor and plaster ceiling.

The oval shaped entrance is a concrete shell in moat, connected by concrete ramps.

The snack bar and souvenir stand are both wood

framed open structures with plastic roofing and concrete floors. The souvenir stand has a plywood exterior.

The fifth part of the project, the bird house, is a steel framed structure with an open screened roof suspended from two columns by steel cables. The sides are enclosed by wire screen fastened to steel cables.

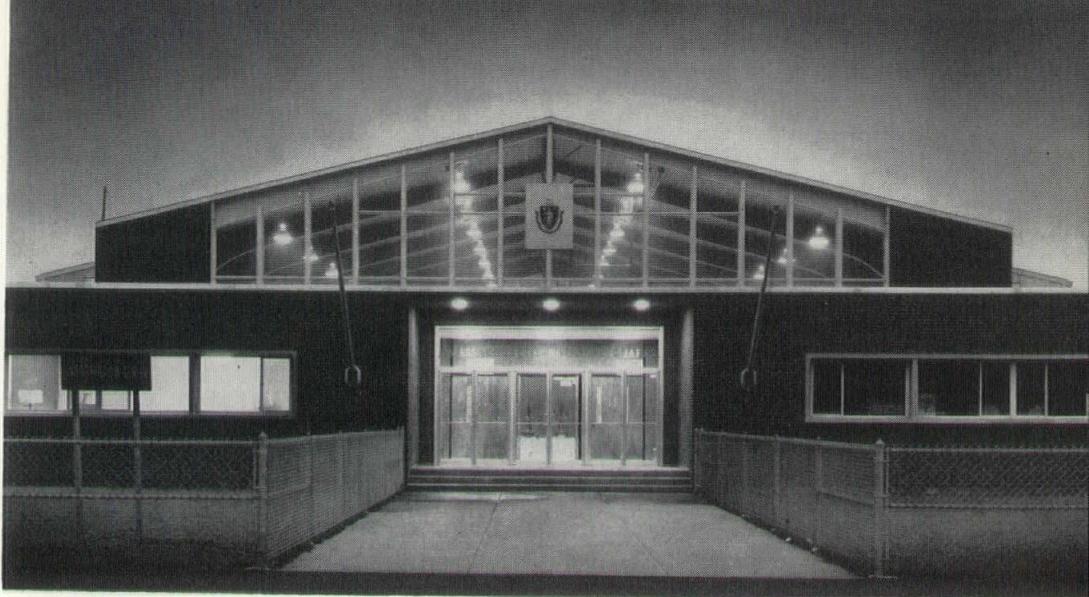
Boston's Animal Nursery was developed as a contact area for children and small animals where, under supervision, children may feed and handle a variety of otherwise uncommon species. Play areas are designed for both animals and children with an eye to the physical capacities and care of each.

Engineers: Nickel-Borek & Associates, Boston

General Contractor: Pinn Construction Company

PRINCIPAL SUB-CONTRACTORS AND MANUFACTURERS

Roofing & Flashing—Federal Sheet Metal & Roofing Co., Jamaica Plain. **Metal Windows & Screen**—Rosco Products of Massachusetts, Cambridge. **Caulking, Waterproofing, Dampproofing**—Chester Newman Co., Cambridge. **Miscellaneous Metal Work**—American Architectural Iron Co., Inc., East Boston. **Acoustical Treatment**—Johns-Manville Sales Corp., Boston. **Ceramic Tile**—Merrimac Tile Co., Inc., Derry, New Hampshire. **Asphalt Tile Flooring**—Appalachian Flooring Co., Somerville. **Glass & Glazing**—Lawrence Plate & Window Glass Co., Lawrence. **Painting**—R. E. Chick Painting Contractors, Peabody. **Plumbing**—Kahn Plumbing Contracting Corp., Medford. **Electric**—Delta Electric Service, Inc., Allston.



To accommodate 3 units and a Battalion Headquarters, William W. Drumme designed a National Guard Armory in Cambridge, Mass. The \$443,000.00 erection is programmed with a combination drill hall and gymnasium, rifle range, locker rooms, lavatories, instruction and classrooms, and a kitchen. It occupies approximately 25,800 sq. ft. and is equipped with special items such as bleachers in the laminated wood drill hall and kitchen facilities.

The unit is structured with reinforced concrete columns, beams, and roof slab. The foundation is of reinforced concrete walls, spread footings and concrete pilings, 6" structural slab. The 12" exterior cavity walls are faced with brick and backed with concrete; interior walls are concrete block.

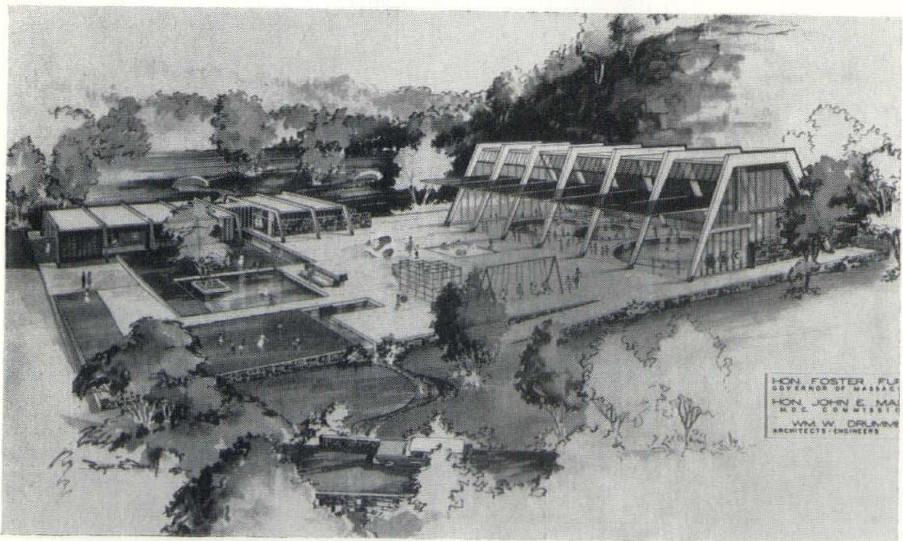
NATIONAL GUARD ARMORY

Engineers: Nickel-Borek & Associates, Inc., Boston

General Contractor: Reid Construction Co., Inc., Cambridge

The floors of the Armory incorporate hardwood in the drill hall, asphalt tile in the corridors, offices and classrooms, ceramic tile in the lavatories, and concrete elsewhere. Asphalt shingles are found in the drill hall and 5-ply tar and gravel on the rest of the building. Lighting is pendant incandescent and fluorescent.

RECREATION AREA FOR EXCEPTIONAL CHILDREN FOR M.D.C.



The Exceptional Children's area is an innovation in the problem of mentally and physically retarded children. All facilities are designed with their need in mind. This is the description given the Recreation Area for Exceptional Children for M.D.C. in Hyde Park, Boston, Massachusetts.

The program includes a gym with

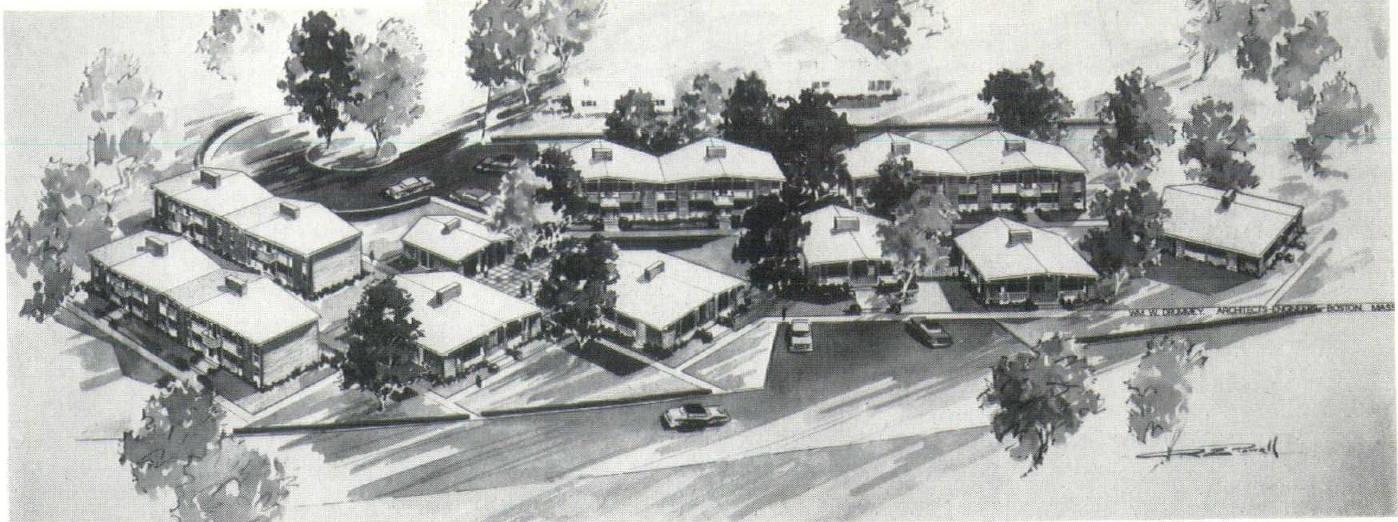
locker and shower facilities, swimming pools and wading pools, an activities and all-purpose room, library, canteen, offices, developed outdoor play areas, and parking facilities. This unique project, which offers year-round operation to all groups, covers an area of 25,000 sq. ft. The cost is estimated at \$700,000.00.

Engineers: Nickel-Borek & Associates, Boston

General Contractor: Out for bid at Publication Date

Structural description includes slab on grade, reinforced concrete foundations and spread footing, caissons, precast concrete bents and decking. The exterior walls are of rubble stone and stucco, steel window walls, and sliding glass doors. The interior walls are composed of concrete block with sprayed glaze, wood paneling, and rubble stone.

The floors are of Vinyl Asbestos tile in the gym, ceramic tile in the pool areas, and rubber based terrazzo throughout the rest of the project. The ceilings are acoustical tile, the roof, tar and gravel. Rigid insulation, forced hot water heating and ventilating, fluorescent lighting and flood lighting to play areas, wooden and sliding glass doors constitute the remaining structural description.

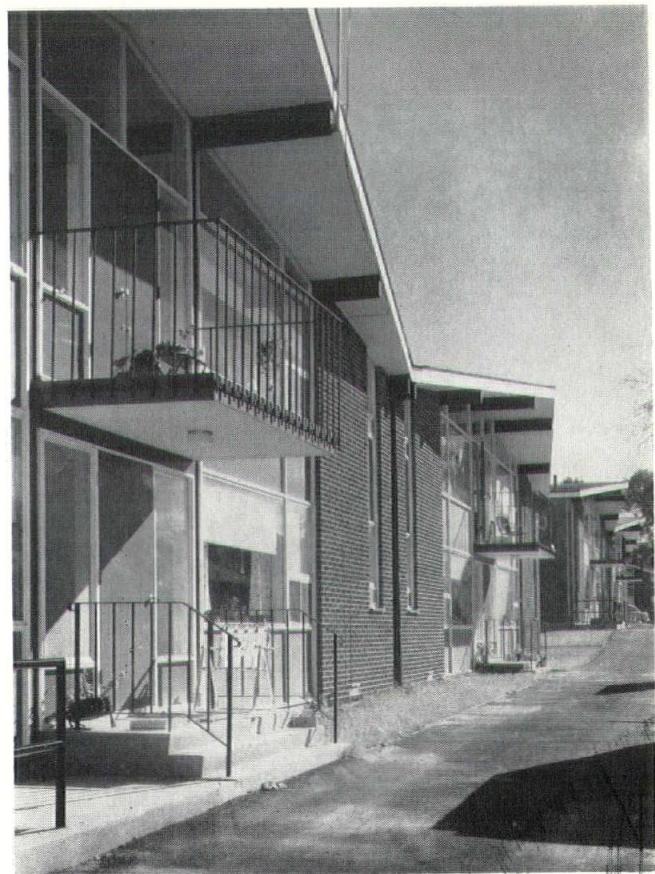


Engineers: (Both Projects) Nickel-Borek & Associates, Boston
General Contractor: Haverhill—Roberto Construction Co., Inc., Wakefield
Holyoke—Fred J. Findlen & Sons, Dedham

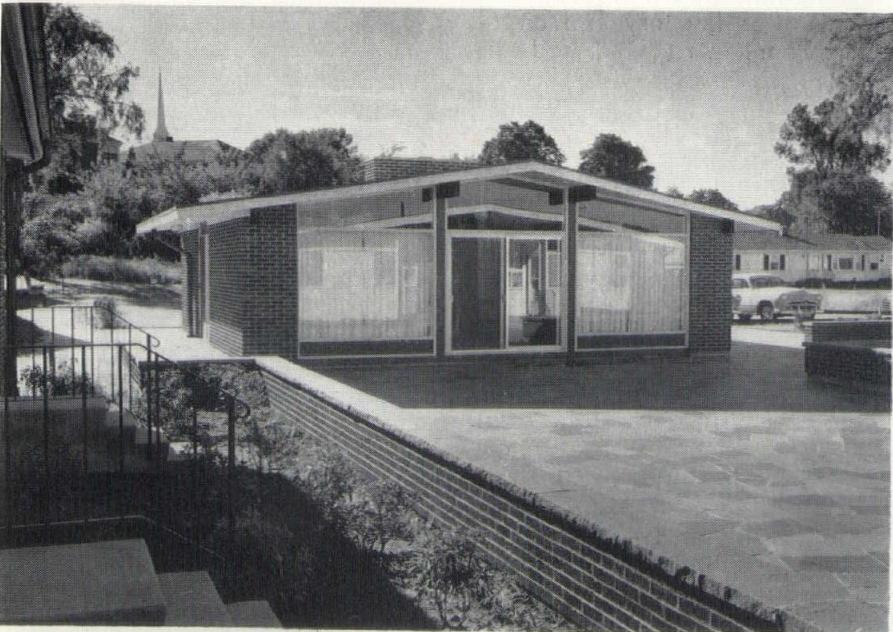
HAVERHILL HOUSING FOR THE ELDERLY & HOLYOKE HOUSING FOR THE ELDERLY

Pictured here are two similar projects designed by W. W. Drummeay—the Haverhill Housing for the Elderly, Haverhill, Massachusetts, and the Holyoke Housing for the Elderly, Holyoke, Massachusetts. The projects are pleasantly situated in open areas to allow respectable, dignified, non-institutional living. Entrance and service areas are divided.

The Haverhill Housing contains 52 one-bedroom units to accommodate 104 persons. These units are grouped into 9 dwelling structures of two basic types—large structures hold 8 living units; smaller ones, 4 units. Of the total 93,200 sq. ft. of space, each unit occupies approximately 490 sq. ft.—living room, bedroom, kitchen, bath. The project also offers a Commons Building with a lounge, kitchen, laundry, lavatory facilities, flagstone terraces and sitting walls.



WILLIAM W. DRUMMEY



Holyoke's Housing for the Elderly is somewhat smaller with 40 one-bedroom units and Commons facilities. The design is restricted to a one-block site of 27,000 sq. ft.

The structural description is identical in both projects—post and beam with wood joists; reinforced concrete foundation walls and spread footings; exterior walls of brick veneer, transite panels, baked enamel, steel vent sash; interior walls of wood studs with metal lath and plaster. The floors of the units are wood joists and wood sub-flooring, finished generally parquet with tile in baths and linoleum in kitchens. Wood rafter, plywood deck and asphalt shingles make up the roofing. Heating and ventilation is hot water convector at exterior walls; lighting is ceiling mounted incandescent.

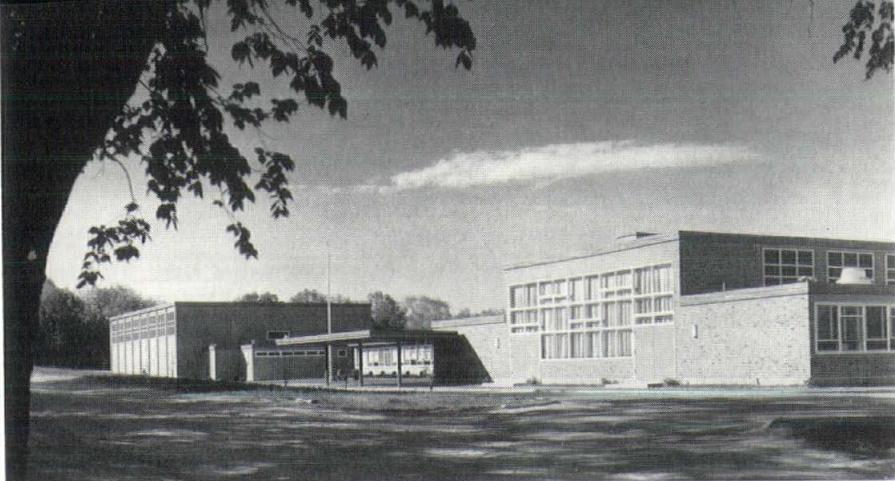
PRINCIPAL SUB-CONTRACTORS AND MANUFACTURERS

Haverhill

Roofing & Flashing—Klein Roofing Co., Worcester. **Caulking, Waterproofing, Dampproofing**—National Waterproofing Co., Boston. **Lath & Plastering**—John Rizza & Son, Watertown. **Metal Windows**—Rusco Products of Massachusetts, Inc., Cambridge. **Glass & Glazing**—Pittsburgh Plate Glass, Boston. **Miscellaneous Metals**—General Iron Works, Lawrence. **Tile**—Zani Tile Co., Watertown. **Resilient Flooring**—Mari & Sons Flooring Co., Inc., Somerville. **Painting**—D. M. Martin Co., Inc., Boston. **Plumbing**—Henry B. Byers, Marblehead. **Heating**—Arthur E. Perley, Haverhill. **Electric**—Allied Electrical Corp., Lawrence.

Holyoke

Roofing & Flashing—Klein Roofing Co., Worcester. **Caulking, Waterproofing, Dampproofing**—Western Waterproofing Co., Inc., Boston. **Metal Windows & Screens**—Rusco Products of Massachusetts, Inc., Cambridge. **Lathing & Plastering**—R. Dulode & Sons, Holyoke. **Tile**—John J. Bannon Co., Springfield. **Miscellaneous Metals**—Ornamental Iron Shop, Inc., Springfield. **Painting**—Colonial Painting Co., Springfield. **Plumbing**—Donald J. Mann, Holyoke. **Heating**—Central Heating, Inc., Holyoke. **Electric**—Starr Electric Co., Inc., Springfield. **Flooring**—Kessel & Morse Co., Worcester.



Engineers: Nickel-Borek & Associates, Inc., Boston
Consulting Electrical Engineers: Francis Associates, Marion
General Contractor: Tocci Bros. Construction Co., Newtonville

CLINTON JUNIOR-SENIOR HIGH SCHOOL

Presently set-up for 750 students, with future expansion to 1,000, the Clinton Junior-Senior High School in Clinton, Mass., features a compact, artistically designed project. The scheme of the building allows it academic facilities on three levels; auditorium and administration offices at the street level; a gym and shop at grade level in the rear of the site for easier service and where noise is not objectionable; two-level library opening to the court at lower level and the street at upper level, accessible to students but removed from heavy traffic for quietness. The scheme also lends beauty to the project by including a reflecting/skating pool and extensive landscaping. Adding convenience to beauty are

folding bleachers and a folding partition in the gym, audio-visual, home-making, shop, and lab equipment.

The structure is reinforced columns, beams, slabs generally. Long-span steel joists are used over the auditorium and precast, pre-stressed concrete joists in the gym. The foundation is reinforced concrete walls and spread footings and 50% "Franki" piles. The exterior walls are 12" masonry with face brick, concrete, aluminum sash, and preformed ceramic tile panels. Translucent panel walls are found in the gym. The interior walls are concrete block. Classroom floors are covered with asphalt tile; lavatory and circulation floors in rubber based ter-

razzo. Ceilings are acoustical tile; the roof is 5-ply tar and gravel—20-year bond. Hot water heating with unit ventilators, heating and ventilator units, direct radiation, 1" rigid roof insulation, flush and pendant mounted fluorescent and incandescent lighting complete the construction.

The program of the Clinton Junior-Senior High School includes 24 classrooms, 5 science labs, home economics suite, audio-visual, graphic arts, wood, and metal shops, music room, principal's office, guidance facilities, superintendent's offices, health suite. The erection covers 111,500 sq. ft.

PRINCIPAL SUB-CONTRACTORS AND MANUFACTURERS

Miscellaneous Metals—Groisser & Snalger Iron Works, Somerville. **Caulking, Dampproofing, Waterproofing**—Western Waterproofing Co., Boston. **Roofing & Flashing**—John F. Shea Co., Inc., Mattapan. **Spray Plastic Roofing & Waterproofing**—John F. Shea Co., Inc., Mattapan. **Resilient Tile & Wood Floors**—Flooring Associates, Somerville. **Terrazzo & Quarry Tile Floors**—Albre Marble & Tile Co., Dorchester. **Acoustical Ceilings**—Pitcher & Co., Inc., Worcester. **Plaster & Acoustical Plaster Ceilings**—Joseph Tonelli & Sons, Inc., Worcester. **Pre-formed Ceramic Tile Panels**—Ceramic Tile Panels, Inc., Canton, Ohio. **Glass & Glazing**—Pittsburgh Plate Glass Co., Worcester. **Painting**—C. Dale Garbutt, Inc., Saugus, Mass. **Curtain Wall Construction & Aluminum Windows**—Modu-Wall, Inc., Parchment, Michigan. **Plumbing**—Wheelen Company, Gardner. **Heating & Ventilating**—J. G. Lamotte & Sons, Boston. **Electrical**—H. W. Fairbanks Electrical Contracting Co., Inc., Worcester.

CENTRAL INTERMEDIATE SCHOOL

Six hundred students occupy the 20 classrooms of the Central Intermediate School in Haverhill, Massachusetts. They have at their disposal a woodworking shop, a drafting room, library, cafeteria seating 170 for meals and 600 for assemblies, a two-part gymnasium, home economics room, and a music room. The floor area of the school is 54,500 sq. ft.; the finished cost, \$944,787.80.

Structurally the building consists of a reinforced concrete foundation and slab; exterior walls faced with 4" brick, backed with 8" concrete block, and using steel sash; interior walls of concrete block. Generally the floors are asphalt tile, although in the kitchen and toilet areas terrazzo is used, and in the gym, wood. Ceilings in the classrooms and activity areas are exposed beams; acousti-

cal tile is utilized elsewhere. Laminated wood beams with wood roof decking and 5-ply tar and gravel top the construction. Rigid insulation, unit vent heating, and ceiling hung fluorescent lighting complete the structural description.

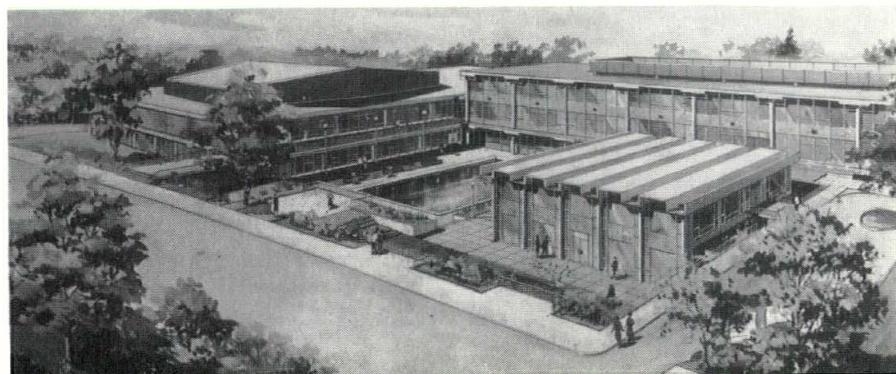
PRINCIPAL SUB-CONTRACTORS AND MANUFACTURERS

Roofing & Flashing—Letoile Roofing Co., Haverhill. **Metal Windows**—Republic

Steel Corp., Truscon Division, South Boston. **Laminated Wood**—Unit Structures, Inc., Swampscott, Mass. **Tile & Terrazzo**—Colonial Marble Co., Cambridge. **Resilient Floors**—Flooring Associates, Inc., Somerville. **Glass & Glazing**—Haverhill Plate Glass Co., Haverhill. **Miscellaneous & Ornamental Iron**—Security Steel & Wire Works, Somerville. **Acoustical Tile**—Armstrong Cork Co., Boston. **Painting**—M. Melchiono, Medford. **Heating & Ventilating**—Francis H. Maroney, Haverhill. **Plumbing**—Francis H. Maroney, Haverhill. **Electrical**—Earle B. Hamel, Haverhill.

Engineers: Nickel-Borek & Associates, Boston
Edwin L. Steinbrenner, Boston

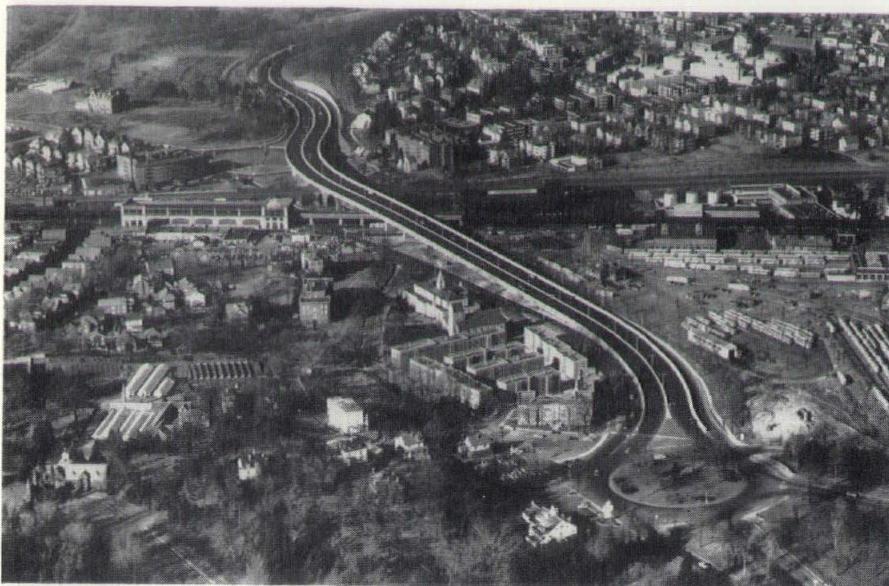
General Contractor: Sawyer Construction Co., Inc., Burlington



FOREST HILLS OVERPASS

The Forest Hills Overpass, Boston, Massachusetts, extends from the Jamaica Way entrance of Arnold Arboretum to the rotary at the Franklin Park entrance on the south. This superstructure has a 22-ft. clearance over the elevated MTA rapid transit tracks at

Engineers: Hugh P. Duffill, Boston
General Contractor: Taurasi Construction Co



Washington Street, and over the NY, NH, and Hartford R.R. tracks north of the Forest Hills Terminal.

The deck consists of two 34-ft. traffic lanes separated by a 2-ft. median strip and protected at the outer edges by integral concrete curbs and parapet walls faced

WILLIAM W. DRUMMEY

with brick. A bituminous surfaced concrete-filled steel grid deck is supported on 36" wide flange rolled steel sections reinforced with cover plates welded to the top and bottom flanges. Deck designed for H20-S16-44 highway loading. Stringer beams are spaced at 5' 0" on centers. There are built-up structural steel plate girders at parapet walls.

Typical pier spacing is 80' 0". Single leg piers at typical spans; double leg piers at rapid transit, railroad and Washington Street spans. Brick-faced concrete retaining walls at access panels; stone faced retaining walls at bypass roads. The maximum slope at ramps is 3½%.

The project, which covers an over-all length of approximately 3,000 ft., was constructed in 1951-52 for the Metropolitan District Commission of Massachusetts, under the direction of Chief Engineer, Benjamin W. Fink of the Parks Division.

ADDITION TO ENGINEERING BUILDING



The University of Massachusetts at Amherst, Massachusetts, has acquired an addition to their engineering building. The scope of this particular project was to design a new building to meet current laboratory and classroom needs; to link the new building with the old and remove the old as required; to allow for future expansion of the new building and future connection to additional structures. William W. Drummeay skillfully fulfilled these requirements. A 300 seat lecture

hall, 2 large drafting rooms, 15 laboratories, lab suites and equipment, 5 conference rooms, and 26 offices are now a part of the University.

The structural description includes a foundation of reinforced concrete with bituminous damp-proofing; exterior walls of reinforced concrete with stone veneer above the grade for the basement floor, faced with brick (matching existing brick) over concrete block—stone veneer spandrel with aluminum vent sash; in-

Engineers: Nickel-Borek & Associates, Inc., Boston

Edwin L. Steinbrenner, Boston

terior walls of 6" concrete or glazed block; ceilings of suspended mineral tile or steel pan acoustical ceilings as required for various lab condition; a roof of 5-ply tar and gravel—20-year bond. The heating system is forced hot water for radiation at glass line throughout. The addition is ventilated by a central warm-air system with overhead supply and underfloor return at corridors.

The possibility of extending the new addition above the basement level in those areas currently undeveloped has been provided for.



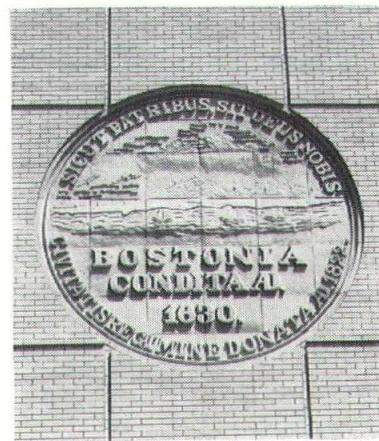
INTERESTING DESIGN+NATCO BRICK=MODERN GARAGE

Graceful, modern architectural design, plus the beauty of smooth, unglazed, buff-colored Natco face brick sets this new downtown Boston parking garage apart as one of the finest in the country.

Apart from being simply a functional structure capable of handling 734 automobiles, this 12-level garage makes an aesthetic, architecturally pleasing contribution to the City of Boston's redevelopment program.

Clear ceramic glazed Vitritile, also made by Natco, was used to face interior walls in the garage office, wash rooms, attendants' quarters and warming rooms for elevator operators. Low maintenance costs result since this structural facing tile requires only a periodic wiping to retain a clean, cool, new appearance.

The architect, Mr. S. S. Eisenberg, referring to the new parking garage stated, "We tried to provide modern design with the best materials available."



NATCO CORPORATION

General Offices: 327 Fifth Avenue, Pittsburgh 22, Pennsylvania. **Other Branch Sales Offices:** Boston, Chicago, Detroit, Houston, New York, Philadelphia, Pittsburgh, Syracuse, Birmingham, Ala., Brazil, Ind. **In Canada:** Natco Clay Products Ltd., 57 Bloor Street, West, Toronto

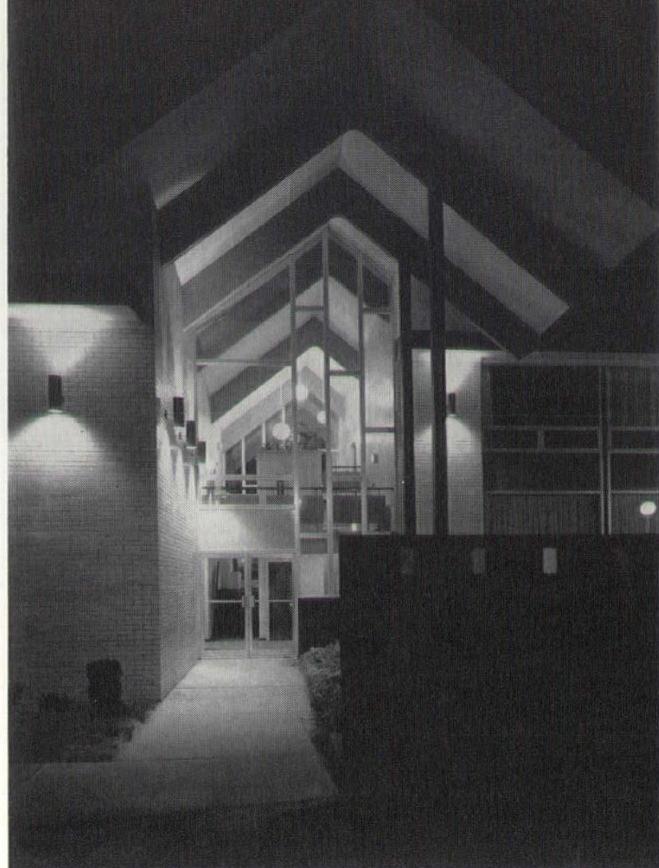
The 175-unit Country Squire Motel is made up of four buildings, on a hillside site overlooking New York Route 15. An artificial waterfall pours colorfully lighted water into the larger of two connected swimming pools and is visible from a nearby New York State Thruway exit.

Harris A. Sanders, A.I.A., of Albany, was architect for the project.

The design is characterized by repetitious forms that tie the buildings together and by detailed planning that takes full advantage of the hillside site. The longest buildings run parallel with the grades, eliminating as much excavation as possible, and the others run against the grade, forming several multiple-level units. The buildings frame the 16-foot high waterfall, swimming pools and terraces.

The roof forms probably are the most distinctive feature, from an appearance standpoint. The largest building, on the hilltop, houses 126 living units and has a pitched roof broken up with a 13'-8" wide folded plate over a lobby. The ell-shaped wing has a split-level lobby with plywood box beam bents supporting a gabled panel roof. Further down the slope, the deluxe building, which has balconies facing the recreation area, steps down the hillside with broken pitched roofs.

The most interesting roof is at the bottom of the slope. This is a 140-foot long folded plate which spans the 50-foot wide restaurant and registration building. The 64-foot long roof plates rest on columns 13'-8" o.c. A cabana building behind the restaurant has a 20-foot clear span that repeats the lines of its larger cousin.



This is a view of the split level lobby of the 126-unit building at Country Squire Motel. The fir plywood bent box beams were designed to eliminate the need for any tie rods or buttresses. Standard stressed skin panels are used for the roof. All soffit material was made from medium density resin-fiber overlaid fir plywood panels, to provide a smooth, attractive painting surface.

COMPONENTS SAVE 11,200 MAN-HOURS ON MOTEL JOB

The biggest use of fir plywood components made so far anywhere in the world saved 11,200 man-hours in construction of a Rochester, N. Y., luxury motel and made it possible to put it into operation three months early.

Finally, the kitchen and storage areas behind the restaurant are roofed with stressed skin plywood panels supported by 31-foot box beams 13'-8" o.c.

Sanders persuaded his client to switch from conventional construction on the grounds that erection speed would put the motel into business faster. This would save interest on financing the \$2 million project and bring closer the time when the motel would be producing income. As it turned out, the first guests occupied rooms in June instead of September, allowing the motel to get into operation one full season ahead of what ordinarily could be expected.

The motel is part of a chain owned by Country Squire Realty Company, Inc., Gloversville, N. Y.

This is the main restaurant and dining room of the Country Squire Motel. The stained glass roundelay curtain at right conceals the raised cocktail lounge. The folded plate roof, made of clear-span fir plywood stressed skin panels 64 feet long, helps provide acoustical control as well as adding unusual esthetic values to the room.

The firm commissioned Sanders on the basis of his design for a similar motel at Utica, built conventionally. The Rochester project was to be a near-duplicate of the Utica motel in design and construction.



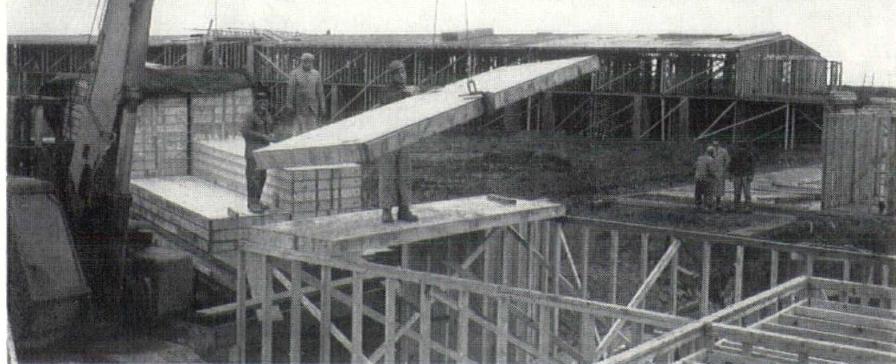


Each of the luxury units at the Country Squire Motel has its own private balcony overlooking the recreation area and Route 15 far below.

Because of its similarity to this sister project, it was possible to make close comparisons in cost and time of erection, in addition to making comparisons in performance between conventional construction and components in identical application.

The contractor estimated that the cost of installation for stressed skin panels ran about 5 cents per square foot. Roof panels, which came in comparatively few types, ran about 65 cents psf delivered and the folded plates for the restaurant figured out to \$1.80 psf in place. Because of the variety of panel sizes in other areas, Cozzolino Builders, General Contractors, hesitated to quote costs.

According to Sanders, the motel units cost approximately \$13 psf and the restaurant and lobby area \$22 psf. There are four types of accommodations, however, ranging from 13 x 20 family units with private balconies to 13 x 16 single units on the ground floor of the larger building.



Stressed skin panels are unloaded directly from the Champlin Company truck and put in place on a wing of the Country Squire Motel, near Rochester, New York. The first panels arrived on the job October 1st and by October 26th the wing shown here had been completed except for finishing.

Cozzolino Builders, Inc., of Albany already had been awarded the contract on the basis of conventional construction. Neither Sanders nor Burt Cozzolino, President of Cozzolino Builders, Inc., was familiar with component construction when Sanders began investigating the possibilities of switching.

Sanders first got an approval from Simon and William Backer, officers of the Country Squire Realty Company, then called in Cozzolino and William Petry, a PFS official. Together, they went over the plans, then contacted the Champlin Company of Hartford, Connecticut—360 miles away. Champlin had only recently created its components division and had little information on which to base its bids. Component fabrication was such a new field that sales engineer Kenneth M. Watson had to depend on educated guesses. Nevertheless, the possibilities looked so good that Cozzolino agreed to the change and even cancelled a \$50,000 lumber order already placed.

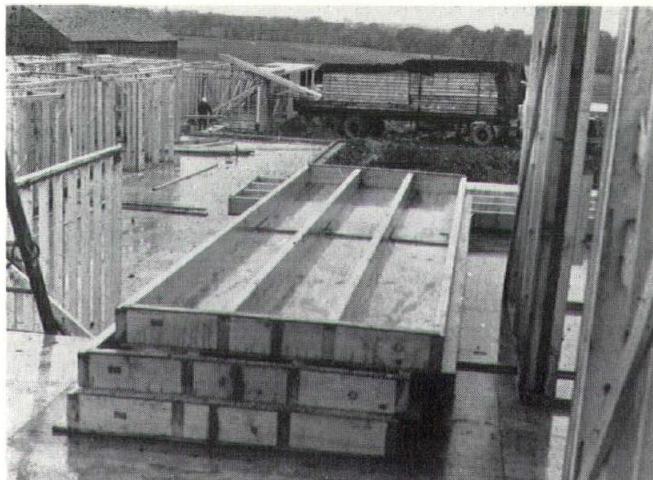
Champlin, barely out of the pilot stage, had an eye-opening order for components that eventually reached more than \$100,000. It also had the problem of getting 1579 components over winter roads to Rochester—and of getting them there in the right order and at the right time. These pieces ranged in size from stressed skin panels 8 feet wide and 64 feet long to bent box beams 41 feet long and 4 feet deep.

The components were used principally for roof and floor decks and Champlin solved its production and delivery problems so well that Cozzolino had to prefabricate interior partitions to keep up with the arrival of the panels.

Architecturally, the restaurant building is the most unusual, although Sanders devised several innovations to achieve more conventional effects elsewhere. For example, a canopy over a lobby in the 126-unit building is a single bay folded plate.

The restaurant building itself is 50 by 140 feet, with the kitchen at the rear. In addition to the main restaurant, the building includes an interior banquet room and a raised cocktail lounge screened from the eating area by a stained glass "roundelay" curtain.

The kitchen building and a brick pier at the front of the structure provide shear walls for the folded plate roof. Box beam bents supporting the carport canopy in front of the registration area and a masonry wall at the far end complete the buttress system.



One of more than 25 different kinds of stressed skin panels used in construction of the Country Squire Motel is stacked on top of a floor made up of similar plywood components. These panels display the typical construction of the units.

Sanders incorporated several architectural innovations into the motel, but his daring, and that of the owner and contractor, in gambling on components probably is more significant.

Sanders and his associate, Peter Seidner, got their first information on building components from the Douglas Fir Plywood Association and Plywood Fabricator Service, Inc. PFS is a new agency that offers technical assistance, quality control and promotional help to fabricators.

The roof itself is made up of stressed skin panels 64 feet long and 8 feet wide that were erected in V-shaped pairs. Their ends rest on glue-laminated columns tied together by a 4 x 6 inch glue-laminated collar beam with special steel anchor plates.

Each of the 18 plates in the roof has a single top skin of 1-inch C-D fir plywood over framing of 2 x 4s in a variety of combinations, depending on location. Champlin fabricated the panels in sections and assembled them at the site.

This roof and, to a lesser degree, the similar one on the cabanas, gave Sanders some headaches before the design was completed. At the time it was conceived it was the longest plywood-sheathed folded plate contemplated anywhere in the world. Design data was available from the Douglas Fir Plywood Association, but Sanders had to have a 60-pound design load and also had to clear the New York State Building Code.

Sanders solved the problem of finding an engineer experienced in wood structures by approaching A. B. Onderdonk of Glastonbury, Connecticut. Onderdonk produced a design that later was checked by DFPA research engineers and finally put to use.

The carport at the end of the building is unique, however, and complements the folded plate in several ways.

Three 41-foot bent box beams duplicate the pitch of the roof and tie it visually and structurally to the ground. They are roofed with a series of stressed skin panels that follow the folded plate roof line, yet terminate it with a series of inverted pyramids as the ceiling of the carport. Piers standing in a reflecting pool buttress the bents, which in turn act as the end shear support for the folded plate.

Chords are laminated from four 2 x 6s and webs are an inner layer of 5/8-inch A-C fir plywood, with an outer web of 1-inch A-C. The bents taper in depth from four feet where they join the roof to 16 inches at the piers. Shear plates and spacers were used in critical areas.

Sanders used a similar system to span a 13-foot, 3-inch area between two sections of the largest living unit and to provide a roof for the portico there. Bents 24 inches deep were used to support the stressed skin panel roof. A similar area on the building's other wing was roofed with the single-bay folded plate already mentioned, using 8 x 82-foot stressed skin panels.

As far as the use of the components themselves was concerned, Sanders and Cozzolino feel they are valuable enough to use anywhere they have application. There were, however, some areas where problems came up that were caused by unfamiliarity with the system and because this was the first really large-scale use of plywood components.

Both the architect and contractor were impressed with the speed they were able to achieve. Basing his comparison on the Utica motel, which he also built, Cozzolino figures he spent 9.1 man-days roughing in each unit on the conventionally built job, 1.1 man-days on each Country Squire unit. This speed also made it possible for a four-man crew to lay 3,000 square feet of floor per day, using a crane. This included both top and bottom surfaces.



This is the main registration desk for the Country Squire Motel. It is located in the same building as the restaurant and covered by a fir plywood folded plate roof.

In practice, it meant that Cozzolino's crew could—and did—close in the 126-unit building between the first week in September and the first week in November. The first concrete footing was poured August 24th and the first floor panels delivered Oct. 1st. In addition, floor slabs were poured for the 49-unit building during that period.

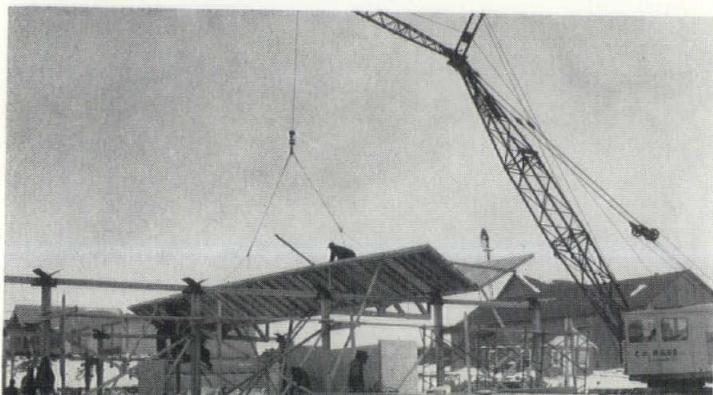
By way of comparison, it required 17 carpenters six weeks to close in 54 units at Utica. Cozzolino had only eight carpenters on the Rochester Country Squire job.

Sanders claims the Country Squire was the only major construction job in the area not halted at any time by severe winter conditions. One example of the simplicity of component construction was the bents used on the living unit. They were put in place on a January day, with snow falling and a cold wind blowing. The bents arrived by truck, were lifted into place and bolted down very quickly. Then the stressed skin roof panels were hoisted into place and nailed to the bents.

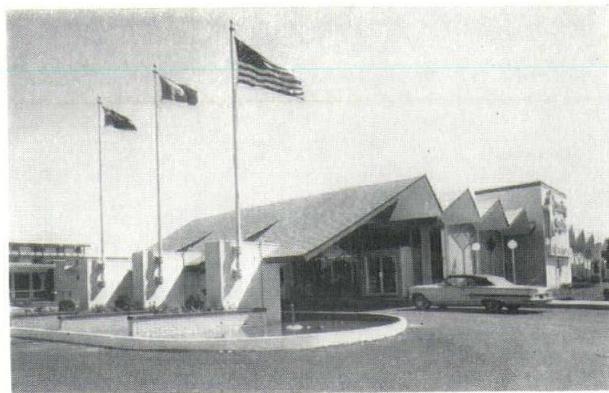
The three-man crew that performed this job was wearing parkas and heavy mittens. Covering the same area with conventional construction would have been impossible. Handling a hammer and nails, performing the necessary cutting and measuring and working in the cold at such a height would have been a nightmare.

Continued Next Page

A folded plate consisting of two 8 by 64-foot stressed skin panels connected at the valley goes into place as one of nine units in the Country Squire restaurant roof. The roof is 50-feet clear span, with 7-foot cantilevers at each end. Skins of the panels are 1-inch plywood, with framing principally of 2 x 4s.



Appearance turned out to be an important factor to Sanders, who was able to achieve a number of effects that would otherwise have been difficult or impossible. For instance, the interior plywood ceiling panels were finished with lath and acoustical plaster. There were no signs of deflection cracks anywhere throughout the project. This was not the case in the Utica motel.



Piers supporting the flags act as buttresses for three bent plywood box beams over the carport area before the main entrance to the registration area and restaurant of the Country Squire. The continuation of the folded plate over the restaurant was hung from the bents and the structure braced by creating a series of inverted plywood pyramids on the underside of the carport roof.

To eliminate cantilevered support beams at the eaves, Sanders redesigned the interiors of perimeter panels, putting the lintels inside, and came up with a 13-foot, 8-inch panel 8 feet wide. Three feet of the panel width was cantilevered for the eave, and soffit areas of the panels fabricated with skins of medium density overlaid plywood, with a smooth, resin-fiber surface for a smooth, paintable surface.

Sanders used plywood box beams extensively for structural framing members, in 31 and 13-foot spans.

"We thought about steel, at first," Sanders said. "We weren't too familiar with box beams over long spans. But it was simpler to use one source of supply and, since steel beams would have weighed 2,500 pounds to 950 pounds for a comparable plywood beams, structural support for the beams was simpler if we stuck to plywood. The real clincher came when we found box beams cost \$200 less than steel, even without adjustments for lighter supporting members."

As it turned out, Sanders would have been unable to get steel beams anyway. The steel strike hit and would have otherwise brought construction to a halt.

Neither Sanders nor Cozzolino stressed cost savings in their arguments for the use of components. They found that there were savings in many areas over conventional construction, because of the drastic reduction in on-site labor, but felt it was impossible to give an accurate picture of cost comparisons. However, the motel was able to take advantage of the lucrative summer season which gave the owners full occupancy income eight months after the start of construction. This, in itself, was worth over \$300,000 gross business for the season, according to the owners. The value of the folded plate roof over the lobby-restaurant building not

only showed a saving in construction cost, but also provided the most striking "sign" to attract travelers.

"We found that factory-controlled glued construction gave us a stronger building," Sanders said, on another aspect. "But, we were worried about the tightness of stressed skin floor panels which were similar to the construction of a 'drum' and could cause percussion sounds through the floors. As it turned out, we get sound control equal to what we obtained at Utica with conventional double plywood 2 x 10 floor construction." All the floor panels in the Country Squire have 2 x 6 framing members.

Sanders also was pleased with the material control and workmanship obtained with production-line fabricating techniques. He since has used Champlin components on several smaller buildings, including a luxury home and two post offices.

There were two drawbacks to Sanders' switch to components, both of which showed up early in construction.

The first involved the tongue-and-groove joint used to join adjacent panels. The groove, with plywood lips, tended to close up during panel-layup and the tongues wouldn't fit. Champlin corrected this quickly by re-engineering the joint.

The second concerned installation of plumbing and wiring. Sub-contractors were confronted with finished surfaces immediately, since there was no intermediate framing stage. Their reaction presented some engineering problems.

"All we could do was cut holes in the panels," Sanders admitted. "Part of this trouble resulted from switching from conventional building. As we went on, we used panels with a single skin and wiring and plumbing could be put inside."

Both Sanders and Watson worked in close cooperation.

"We simply had no pattern to follow," Watson said. "This was the first time anyone had ever done anything like this. On small jobs you might never encounter some of the little things we found here. They were magnified in such a big project. But everybody realized this. Cozzolino's crew was as interested as we were in making this work and the carpenters came up with plenty of good ideas. Sanders knew the problems. With that attitude on everyone's part, it was easy to work things out."

Another innovation Sanders worked out was a new type of curtain wall. He got together for this with manufacturer J. C. Klein of Voorheesville. Each 16 x 8-foot section arrived at the job in one piece and included an interior wooden frame, aluminum sash and porcelain enamel spandrels on the exterior, and insulated glass.

Building exteriors were finished with brick veneer and interiors with plaster, acoustical plaster ceilings and wall-to-wall carpeting over the stressed skin panel floors. All the buildings are air-conditioned.

The 16-foot high waterfall pours into a 65-foot diameter combination swimming and wading pool that is connected to a diving pool 28 feet in diameter.

Bulletin DIGEST

RICHARD BATTLES ELECTED VICE PRESIDENT OF THOMPSON & LICHTNER

Thompson & Lichtner Company of Brookline, Massachusetts, announce with pleasure the election of Mr. Richard F. Battles to the position of Vice President in charge of Engineering with this firm. He is a graduate in Civil Engineering of Northeastern University and also studied at Virginia Polytechnic Institute, Rutgers University and the University of Michigan. After service in the Army during World War II he entered the employ of the Thompson & Lichtner Company and worked on design and development of Logan International Airport and on many other airfield projects throughout the world including the Spanish Bases.

Mr. Battles is taking the position formerly held by Mr. Henry A. Marbach who retired as of December 31, 1960.

CENTURY 21 FINALISTS CHOSEN

Alain Le Normand, architect for the University of Paris, who is one of the finalists in the Century 21 Exposition international competition for design of a spectacular fountain, believes the 1962 world's fair reflects the "dynamic development" of the United States.

Le Normand traveled to Seattle by air direct from London, accompanied by Madame Le Normand, to view the site of the \$250,000 fountain, and to confer with officials of the Seattle Municipal Art Commission, Ewen C. Dingwall, Century 21 general manager, and Paul Thiry, the world fair primary architect. French consul Roger Goteland assisted the Le Normands.

Working with architect Le Normand on the fountain design is the Parisian sculptor, Adam.

Four other teams from abroad and the United States are competing for the opportunity of creating the final design, and for a \$5,000 prize. The five teams received \$2,000 each as finalists. They were selected from among 260 teams who submitted designs from 11 nations.

The competition is sponsored by the City of Seattle. The fountain will become a permanent attrac-

tion in the city when the exposition is completed. The final winner will be named March 31.

NORTON DOOR CO. ANNOUNCES THE APPOINTMENT OF VINCENT SHERIDAN

The retirement of Samuel F. Rolph as General Manager of the Norton Door Closer Company, Division of Yale & Towne, was officially announced today by Leo J. Pantas, Vice President of The Yale & Towne Manufacturing Company. At the same time, Mr. Pantas an-



nounced the appointment of Vincent E. Sheridan, who has served as Sales Manager of Norton since 1954, to the position of Manager of the Norton Door Closer Company Division. Mr. Sheridan will make his headquarters at the new general office building and national distribution center which Norton will open on January 23, at Bensenville, Illinois, a suburb of Chicago, adjacent to O'Hara International Airport.



Mr. Rolph's retirement culminates over a half century of service with Yale & Towne which began in 1907. He had been General Manager of the Norton Division since 1947.

Mr. Sheridan has been associated with the company since 1925. Starting as a stock clerk with the Sager Division, then in North Chicago, he subsequently held managerial positions in both production and

Francis H. Curtin



Insurance Agency, Inc.

As we look forward with the new President of the United States, we ask you to look forward insofar as your insurance and bonding is concerned.

Just as the President is concerned with the welfare and progress of the Nation so should you be concerned with the welfare and progress of your business.

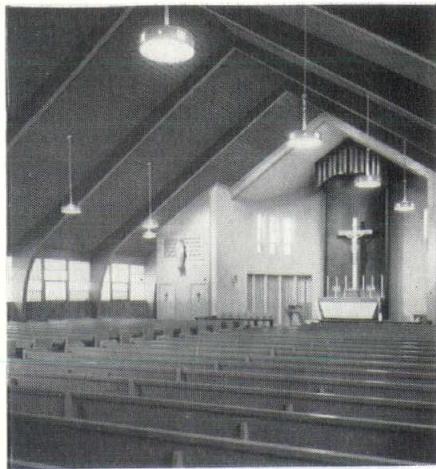
Our reputation is based on concern for the welfare and progress of our clients.

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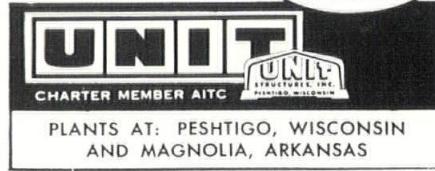
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sales. He was educated in the public schools of Highland Park, Illinois, and at Roosevelt College, Chicago. He is married to the former Harriet Leo of Waukegan. They have a daughter, Barbara, and make their home at 1825 Broadmoor Drive, Benton Harbor, Michigan.

BEACON CONSTRUCTION



Beacon Construction Company and Wellesley Office Park Inc. have announced the signing of a lease establishing the Aluminum Company of America's regional headquarters at Wellesley Office Park in the first of a planned complex of new office buildings, constructed for rental purposes.

ALCOA representatives present at the lease signing were Ray E. Palmer, district sales manager; William W. Curtis, district administrative manager; and W. L. Dykhuijen, assistant district sales manager. Robert Leventhal and Mark J. Waltch, treasurer and vice president respectively, represented Beacon Construction Company and Wellesley Office Park Inc., developers, builders, and owners. Graeme Elliott of Ryan-Elliott and Co., Inc., exclusive rental agents, and Joseph Skinner of Meredith and Grew were also present.

The Office Park is on a 20-acre site at the junction of Route 9 and Route 128 in Wellesley, Boston's prime suburban area. ALCOA's new offices, approximately 10,000 sq. ft. of office space, will occupy

the entire third floor of Building Number One.

This initial building, designed by Salsberg and LeBlanc, is a three-story structure which has 30,000 sq. ft. of office space. It is equipped with air conditioning and automatic passenger elevators. To take full advantage of the attractive surrounding area, the exterior of the

building features abundant glass and aluminum.

Construction of the first building is scheduled to start March 1, 1961. Proposed date of occupancy is September 1, 1961. Other major national tenants are now concluding leases at Wellesley Office Park, details of which will be forthcoming from the respective companies. A second building for single occupancy is anticipated later this year.

The site offers a country-like atmosphere in a protected zoning environment, yet is easily accessible by Routes 9 and 128, the Mass. Turnpike, and public transportation.

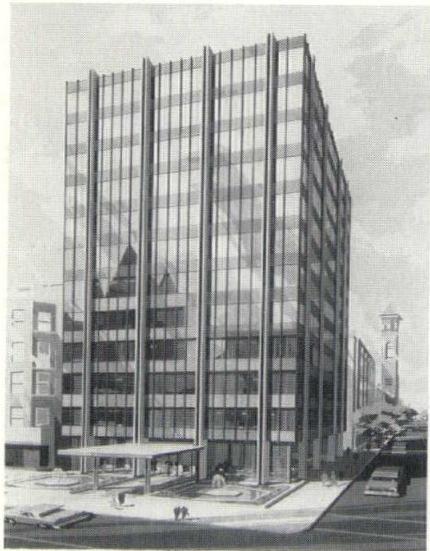
Expansion space for future growth needs, and ample parking facilities are available to tenants. The Park also affords the opportunity to national professional and administrative organizations to maintain offices in proximity to one another—a situation which tends to create a favored business community.

In addition to Wellesley Office Park, BEACON is engaged in a variety of land development and real estate ventures throughout the United States and in Puerto Rico.

12-STORY BUILDING FOR COPELY SQUARE

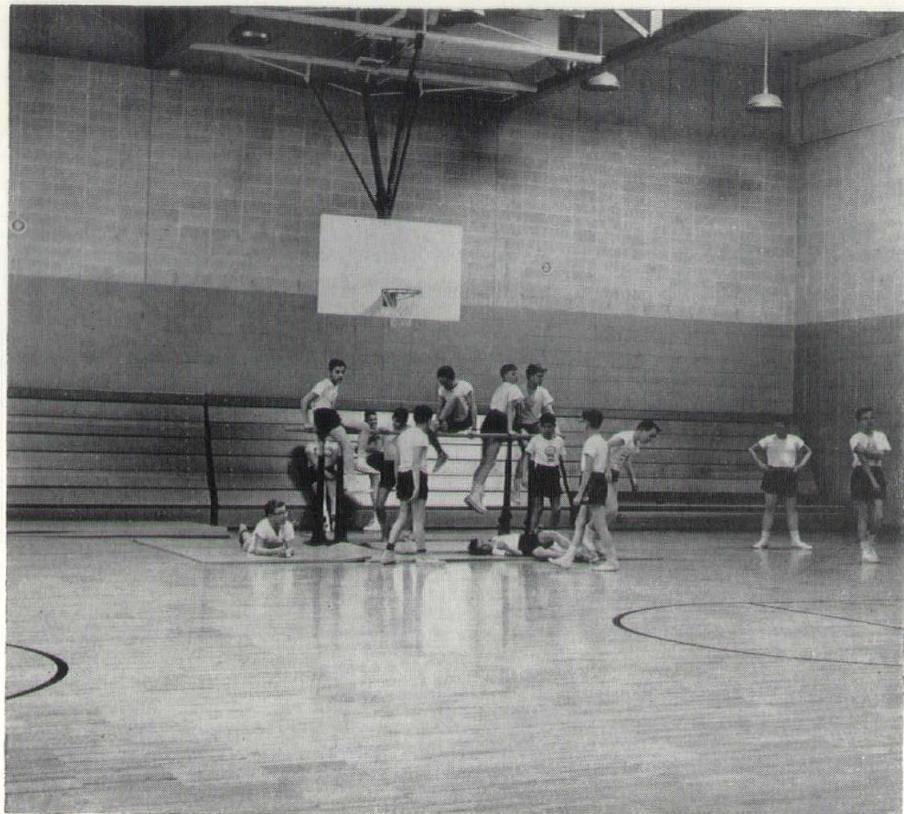
According to a recent announcement made by Mayor Collins of Boston and Sumner A. Weld, vice-president of R. M. Bradley and Co., Inc., Boston's Copley Square will see the rise of a modern 12-story office building at the corner of Boylston and Clarendon Streets. Construction of the new building, the cost of which is estimated at about \$3 million, will begin following the razing of three buildings now standing on that site. Completion is scheduled for 1962.

"535 Boylston," as the newcomer will be christened, will be the fourth new structure in the Back Bay in less than three years. (The others are the White Fund Building, the IBM Building, and the McGraw-Hill Building.) It will comprise 72,000 sq. ft.—6,000 sq. ft. per floor. The architects, Bedar and Alpers, have expressed plans to blend a functional, modern design with the traditionalism of Back Bay.



Owners of the planned structure are a group of private investors known as the Bristol Trust. Lilly Construction Co. will be the builder.

Mr. Weld of the Bradley firm, has stated that the planning of such a building was prompted by the increasing demand on the part of local and national companies for modern office space in the Back Bay. "The McGraw-Hill Building space was taken in fast order by firms eager to have New England headquarters in the Copley Square area," he said. "Already firms have been asking about this new building even as blueprints are completed."



Gymnasium of LELAND WILSON JUNIOR HIGH School at South Windsor, Conn.

Architect:

LOUIS DRAKOS, A.I.A., West Hartford

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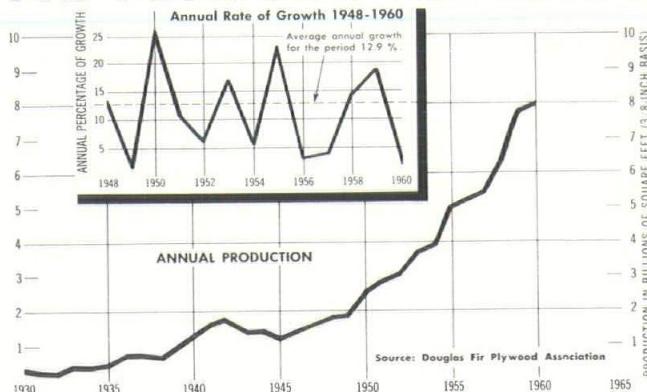
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13TH ANNUAL SALES RECORD SET BY PLYWOOD PRODUCERS

The western fir plywood industry set its 13th consecutive annual sales record in 1960, according to the Douglas Fir Plywood Association. Figures available at year's end indicate total production of approximately 8 billion sq. ft. (3/8-in. basis), for an increase of 3 per cent over 1959.

FIR PLYWOOD INDUSTRY



DFPA, which represents 137 of the 159 mills currently in production, points out this is a modest increase in comparison with 1959, when production climbed 19 per cent. But it was made in a year of semi-depression for the industry and in the face of a drop estimated at 20 per cent in housing starts.

"This means that we have been able to increase our share of the housing market far more than the statistics show," according to W. E. Difford, DFPA executive vice president.

Quoting the generally optimistic predictions for 1961, Difford said he felt industry conditions would improve in the coming year, but that he didn't look for any radical change for about five years.

S. BLICKMAN, INC. ANNOUNCES INDUSTRIAL FOOD SYSTEMS DIVISION

A new division, devoted to planning low-cost, "user-oriented" industrial food service systems, has been established by S. Blickman, Inc., Weehawken, N. J., a major manufacturer of food service equipment since 1889. The new division, which will operate principally in New England at first, is being managed by Dewey Dyer, and will have its headquarters at 620 Commonwealth Avenue, Boston, Mass.

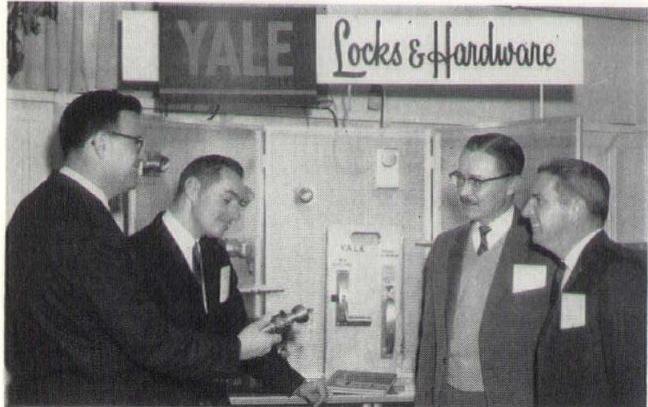
According to Bruce Blickman, vice-president of S. Blickman, Inc., "The industrial food systems division will make food service systems, plans, and uniquely-designed equipment available to in-plant caterers, architects, and management people responsible for food service. It will cut drastically the initial requirements for space and equipment for in-plant cafeterias, as well as their operating costs. Savings may be as much as 50 per cent for all these factors, without impairment of eye appeal, or quality, and without changing the eating habits of people who are served by the new systems."

Plans worked out by the new division make it feasible to operate a complete food service, without a subsidy, for plants with a population of as few as 300 people. Space, equipment, and labor costs for larger plants' food services will be cut in half by designs that use the

industrial engineering concepts of time, labor and materials flow, and work simplification.

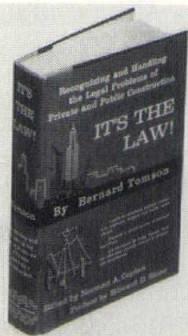
Dewey Dyer, Managing Director of the new division, a registered professional engineer, was formerly Administrator of Employee Services at Raytheon Company, Waltham, Mass. He received his engineering education at Yale University, and has done postgraduate work in psychology and law. His many civic interests include teaching Management Development courses at Merrimack College Evening School of Industrial Relations; and the Presidency of the Essex County Associated Boards of Trade, a county level Chamber of Commerce.

SATELLITE TEAMS TO VISIT MEETINGS OF A.I.A.



Photographed at a recent Producers' Council Satellite meeting held in Worcester in conjunction with the Worcester County Chapter of A.I.A. are left to right, Dave Eskin, D. H. Eskin Company (Yale Distributor), Ed St. Martin, Charles Wesley Gingman, President of the Worcester County Chapter of A.I.A. and Don Armstrong of Yale & Towne.

The Boston Chapter of Producers' Council has several Satellite teams of manufacturers who will travel to A.I.A. meetings in Worcester, Providence, Manchester and Portland to present new product information to architects. The Worcester meeting was the first of this program.



IT'S THE LAW

Recognizing and Handling the Legal Problems of Private and Public Construction, by Bernard Tomson. Edited by Norman A. Coplan, with a preface by Edward D. Stone. 436 pp. Great Neck, N.Y.: Channel Press. \$7.50.

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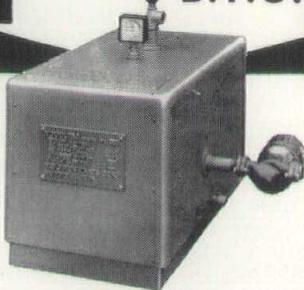
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NEW PRODUCTS AND LITERATURE

NEW STEEL SPECIFICATION TABLES AVAILABLE

Two new standard steel specifications have just been released by the American Institute of Steel Construction, national association representing the fabricated structural steel industry.

The Specification and Loading Tables for Open Web Steel Joists (Longspan or L-Series) has also been adopted by the Steel Joist Institute and supersedes the earlier AISC-SJI jointly-adopted specification which has appeared in the AISC Manual of STEEL CONSTRUCTION since 1955.

The Specification for Architecturally Exposed Structural Steel is a completely new standard. The crisp elegance of exposed structural steel merits preferential treatment in selection of materials and workmanship wherever it is employed architecturally and subject to close scrutiny by the public.

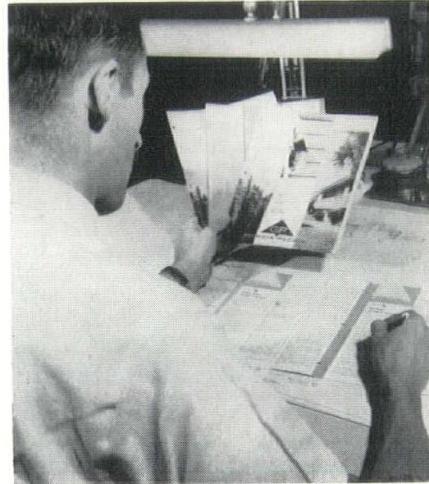
The growing popularity of exposed structural steel as a means of architectural expression has made it advisable to establish standards for closer dimensional tolerances and smoother finished surfaces than required for ordinary structural framing. The objective of this new specification is

to insure satisfactory finished appearance while keeping construction costs in line.

Copies of the two Specifications are available free of charge from AISC, 101 Park Avenue, New York 17, N. Y. or any AISC regional office.

GEORGIA-PACIFIC

A "Full House" of forest products, including plywoods, lumber and hardboards for residential, commercial and industrial uses, is covered in the 1961 Georgia-Pacific Forest Products catalog series. Pre-



pared for dealers, builders, architects, interior decorators, woodworkers and other professionals, it is free to the trade by writing Georgia-Pacific, Equitable Bldg., Portland 4, Ore. Available as a group or individually, they are (1) Decorative Paneling, (2) Siding, Fir Paneling, Sheathing and Subfloor-Underlayment, (3) Overlaid GPX Plywoods and Standard Fir Plywoods, and (4) Hardboards, including detailed specifications.

GLAS-KRAFT OFFERS NEW VAPOR BARRIER BROCHURE

Glas-Kraft, Inc., Slatersville, Rhode Island, a leading manufacturer of laminated, glass fibre reinforced waterproof papers, announces the availability of a 4-page brochure on Ply-Bar, a new ground contact vapor barrier. Said by the maker to be equally effective when used as a concealed flashing, Ply-Bar has exceptional strength as a result of its construction. A homogeneous sheet, Ply-Bar is composed of a layer of chemically treated rot-proof Kraft, a specially compounded layer of asphalt, tri-directional network of glass fibres, a second layer of chemically treated rot-proof Kraft topped with a second layer of specially compounded asphalt and Ply-pane, a 2 mil thickness clear polyethylene.

The brochure will be of particular interest to Architects, Contractors, Damp Proofers and others concerned with industrial and residential construction. It contains architectural tracer drawings together with recommended architect specification forms for the use of Ply-Bar in 7 different applications. Entitled, "This is Ply-Bar," the folder may be obtained direct from Glas-Kraft by requesting Brochure AIA File No. 37.

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AMERICAN HOUSE

An all-aluminum facade, reflecting the harmonious tones of a new aluminum finish, today graces America House, a unique shop on fashionable 53rd Street, New York City.



America House, on New York City's fashionable 53rd Street, features the first large-scale use of Aluminum Company of America's new Duranodic finish. The unique coating makes possible color tones ranging from bronze-silver to a bronze-black.

Supplied by Aluminum Company of America, the facade is a combination of aluminum tubes and panels featuring a coating of Duranodic, Alcoa's recently developed finish, which makes possible color tones ranging from bronze-silver to a bronze-black.

New York architect David R. Campbell chose the Duranodic finish because of its maintenance-free qualities, resistance to abrasion, and diverse aesthetics.

America House, the only shop of its kind in the world, is devoted exclusively to the retail sale of American handicrafts. It is a striking example of how an original brownstone, built in the 1870's, can be remodeled to blend harmoniously with other modern buildings in the area.

The recessed windows on the upper floors are shielded from glare by vertical rectangular aluminum tubes. The vertical louvers extend 10 feet, overlapping horizontal panels of aluminum, and removing all former resemblance to the neighboring brownstones.

The two-story windows on the first floor and mezzanine are framed in upright piers of angelique, a South American teak. It blends with the tones of Duranodic to provide a striking view of the interior design and merchandise of America House.

COLOR FOLDER DESCRIBES ECONOMY PRICED LETTERING SET

A six-page folder, in color, is now available from Keuffel & Esser Co. to describe its new, economy-priced 8935 "Doric"® Lettering Set.

Illustrations include photographs of each of the seven pieces of the lettering set, and of their wooden carrying case. Also shown are samples of the letter faces and sizes that can be drawn with the 8935 Doric.

In addition to the standard capital letters, symbols and numerals, the set includes the complete lower case alphabet in three popular sizes: .100-inch, .140-inch and .240-inch. These letters may be formed at any slant of as much as 22½ degrees from the vertical by simple adjustment of the scribe arm.

Keuffel & Esser Co. is America's largest manufacturer of quality engineering, optical, drafting and reproduction equipment and materials.

For your copy of the 8935 folder, write: B. L. Makepeace, Inc., 1266 Boylston St., Boston, Mass.

NEW AMERICAN OLEAN TILE PRODUCTS CATALOG

A new tile catalog covering the many types and uses of ceramic tile is now available from the American Olean Tile Company. The catalog has been prepared to show many interesting applications of ceramic tile for both functional and decorative purposes.

Featured in the 36-page catalog are numerous color "idea" photos of homes, schools, stores, swimming pools and manufacturing installations using ceramic tile. Also included is a section of photographs of exterior uses of ceramic mosaics, which are becoming increasingly popular in many types of buildings.

The book contains a section on Murray Quarry Tile including technical specifications of sizes and colors available.

Copies are available from the American Olean Tile Company, 1000 Cannon Avenue, Lansdale, Pa. Ask for Booklet 211, "Catalog of Tile Products."

WHEELING TILE COMPANY ANNOUNCES NEW PRODUCT

Wheeling Tile Company has announced the availability of their series of PIROUETTE Patterns—unglazed ceramic mosaics in 13/16" rounds.

Each of the stunning PIROUETTE Patterns features a solid field of circular-shaped tile interspersed with occasional complementing colors.

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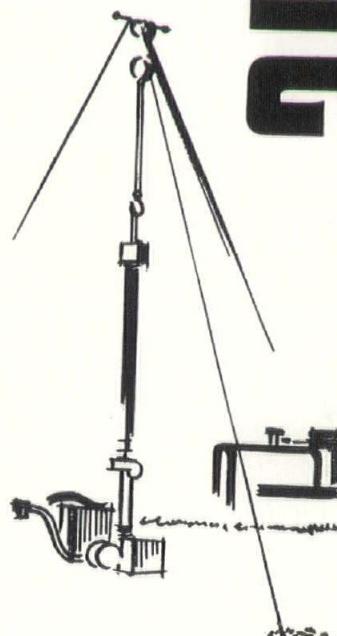
Complete information and available patterns are given in a new 4-color folder available from Wheeling Tile Company, Wheeling, West Virginia.

DAVIDSON FAN COMPANY

Four-page brochure describing new Pleasing Contour Roof Exhaust Fans. Contains Dimension Table & Diagram, Capacity Table, Cut-away view, Typical Specification and Actual Installation Photos. Bulletin No. PC-101.

Four-page brochure describing new low-velocity, high capacity SS Roof Exhaust Fans. Contains Dimension Table & Diagram, Capacity Table, Typical Specification and Actual Installation Photos. Bulletin No. SS-101. Write: Dept 25, Davidson Fan Co., 213 California St., Newton 58, Mass.

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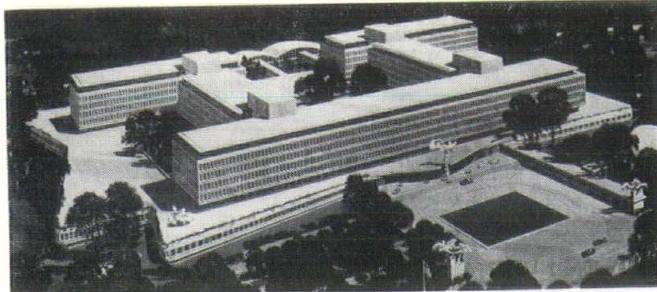
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MORE THAN ONE MILLION FEET OF GRID SYSTEM CONSTRUCTION USED IN NEW CENTRAL INTELLIGENCE AGENCY HEADQUARTERS

The new headquarters of the Central Intelligence Agency of the United States Government, at Langley, Virginia, utilizes approximately 1,250,000 square feet of GRID SYSTEM Reinforced Concrete Construction. The building was completed early this year.



The building is eight stories high, with emphasis placed on the balance of line and mass. The design is the work of Harrison and Abramovitz of New York City. A series of connected blocks, with a large interior court, gives the design a geometric pattern. One outstanding feature of the new headquarters is the canopied entrance which, by taking advantage of the slope of the site, gives access to the basement floor level and, in effect, adds a story to the building's height at the front. Engineers of the building are Edwards and Hjorth of New York City. General contractors were Tompkins-Jones, a joint venture. Adjustable Forms, Inc., of Minneapolis, are the formwork subcontractors. The Grid Flat Slab Corp. of Boston, Mass., supplied the GRID SYSTEM construction.

The new CIA headquarters provides over a million net square feet of office space for agency activities previously located in temporary buildings in the District of Columbia. In addition to the work areas, the facility includes a cafeteria with a seating

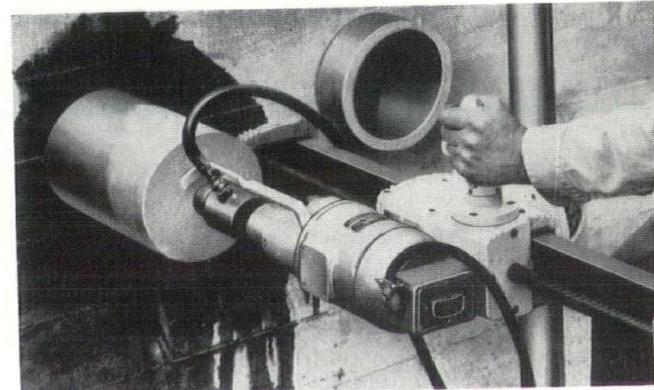
capacity of 1,400 persons, and an auditorium that will accommodate 500 persons. The outside parking lot has space for 5,000 vehicles.

The GRID SYSTEM construction is used throughout the building. All ceilings are hung with air conditioning equipment installed between the dropped ceiling and the GRID SYSTEM structural slab. Two-foot modular steel GRID domes were used, in depths of 6", 8" and 12". This system allows great flexibility in utility layout, and requires only a minimum of shoring and framing. In addition, the GRID SYSTEM construction approaches 100% concrete efficiency and provides considerable savings in construction materials.

The Grid Flat Slab Corporation supplied the GRID domes on a lease basis, together with special nails and hand trucks to facilitate speedy erection and removal of the domes. Dome layouts based on the architect's blueprints and showing the exact location and size of each dome were also supplied by the Boston firm. A working supervisor from the Grid Flat Slab Corporation, together with other necessary labor supplied by the contractor, handled the erection and removal of the GRID domes. 35,000 domes were used at one time to cover an area of 200,000 square feet, permitting the most economical cycle of operation for a project of this size.

FASTER DRILLING IN REINFORCED CONCRETE WITH NEW DI-LOCK DIAMOND CORE DRILLS

A new line of core drills utilizing whole surface-set industrial diamonds for wet drilling reinforced concrete, masonry, stone and blocks of all types is being manufactured and distributed nationally by Felker Manufacturing Company, Torrance, Calif. Felker is nationally recognized for development of its Di-Lock diamond blades and other concrete cutting equipment.



The new CORE-LOCK diamond core drills are available in two drill types—"Resettable," in which case unused or worn diamonds can be reclaimed, and "Throw-away," an economy version.

Contractors will find wide use for CORE-LOCK diamond drills in drilling all forms of steel-reinforced concrete, floors, slabs, walls, etc.; concrete blocks as well as masonry materials of all kinds; granite, marble and other forms of stone, and all similar construction materials.

CORE-LOCK drills are used with circulating water applied through a swivel. Drill diameters start at $\frac{1}{4}$ " O.D. and extend through 14" O.D. Special sizes beyond this capacity are available on order. This range covers all requirements from making holes for passage of $\frac{1}{4}$ " bolts or tubing to such articles as plumbing, electrical conduits, large diameter drainage tile, air conditioning ducts, sewer pipe, etc. Street, highway and airport engineers will find CORE-LOCK drills excellent for taking core samples. Although nominal drill length is 13" over-all, longer drills can be supplied on order. CORE-LOCK drills are available from any Felker distributor or from the Torrance, California, factory. Literature is available from Power Saw Service, Inc., 184 Washington Street, Quincy 69, Massachusetts.

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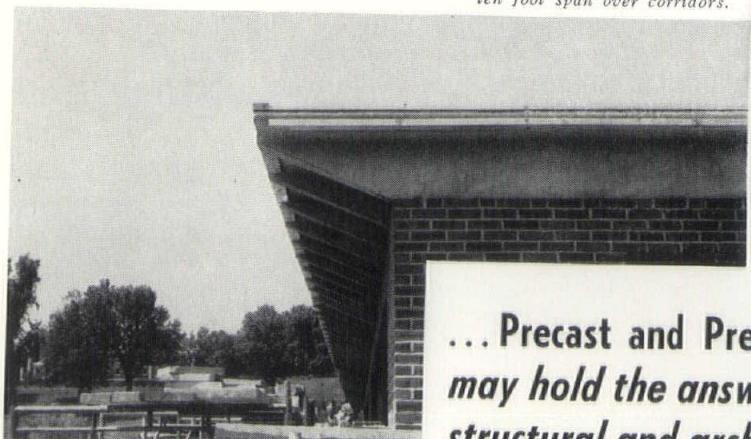
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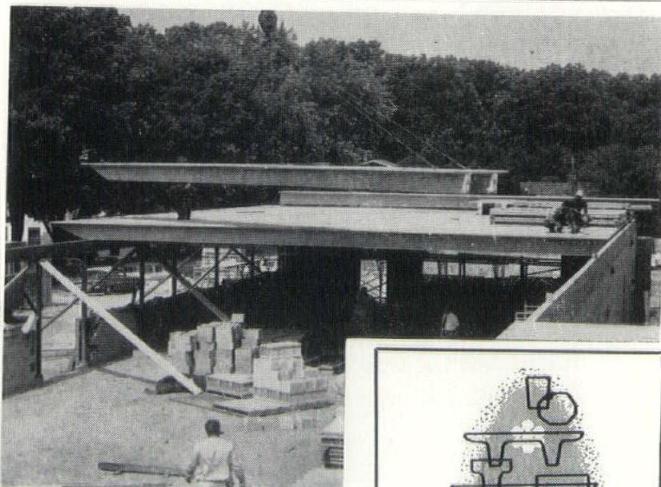
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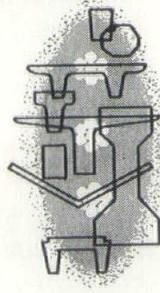
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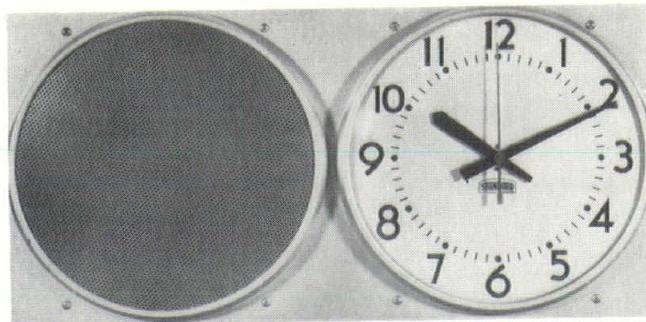
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*PATENT PENDING

STANDARD INTRODUCES CLOCK AND SPEAKER COMBINATIONS

The Standard Electric Time Co. has introduced a new line of electric clock and speaker combinations for installation in schools, hospitals, factories, and other institutional and industrial



buildings. The units combine a clock and speaker companion—mounted in a common panel, and are furnished with either round or square dial components. The clock-speaker combinations are engineered for integration with all types of centrally controlled time, program signal, music, or communication systems.

Complete information is available from the manufacturer, The Standard Electric Time Co., 89 Logan St., Springfield, Mass.

BUTLER OFFERS NEW PLASTIC PANELING WITH 20-YEAR GUARANTEE

A fiberglass-reinforced plastic panel, guaranteed for 20 years to retain uniform surface condition with no blooming of fibers, erosion or surface failure, has been introduced by Butler Manufacturing Company. It is further guaranteed to remain shatter-proof—and that the formula will protect the color and light transmission characteristics of the panel. The new panel is known as Stylox®20.

The factory-registered guarantee, believed to be the first of its kind, is possible because of a newly-developed formulation that resists deteriorating effects of sunlight and water, major causes of checking, fading and clouding.

Butler offers the new panel in a wide range of attractive colors that make it well suited for use as translucent sidewalls, partitions, sunshades, windbreaks or other decorative structures. The



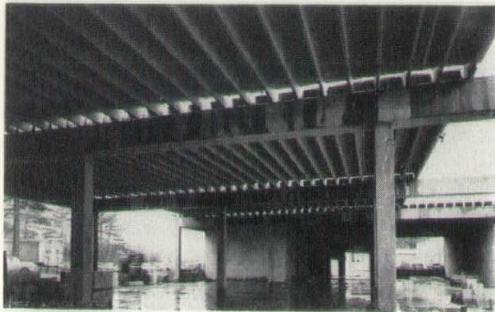
material is also ideal for skylighting and glazing, offering up to 90% light transmission, as well as extremely good heat reflecting and light diffusing qualities.

Stylox®20 panels are reinforced with two ounces of fiberglass, and contain polyester resin modified with 15% acrylic monomer to provide a total weight of eight ounces per square foot. The panels exceed commercial standards CS-214-57 issued by the United States Department of Commerce.

Complete details and specifications of Stylox®20 can be obtained by writing: New England Erecting Company, 321 Commonwealth Ave., Cochituate, Mass.

Long Spans...call for

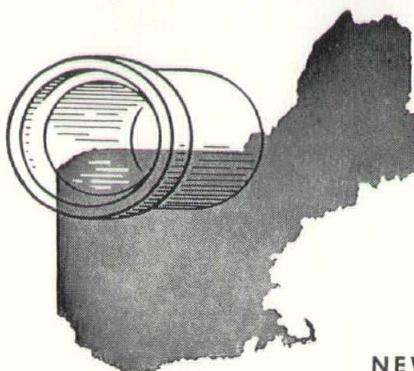
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U. S. PLYWOOD INTRODUCES NEW RED CEDAR SIDING

United States Plywood Corporation has announced the addition of a new, abraded, red cedar 1-11 siding to its extensive line of residential siding materials.



U. S. PLYWOOD'S NEW RED CEDAR SIDING features a deep-textured, brush abraded surface which sharply accentuates its pronounced grain pattern, as shown above. The new siding can either be stained, painted or left to weather naturally as in this picture.

This is the third new Weldwood siding introduced by U. S. Plywood in the last seven months, the company noted.

A highly versatile fir plywood-backed

panel which can either be painted, stained or left to weather naturally, the new cedar siding will be priced comparably to standard fir texture 1-11 sidings.

In addition to the warmth and richness of color inherent in the red cedar facing, the new siding material also features a deep-textured, brush-abraded surface which sharply accentuates its pronounced grain pattern.

Available in 4' x 8', 9' or 10' panels, the siding has $\frac{1}{4}$ " grooves either 2", 4" or 8" on center and comes in $\frac{3}{8}$ " or $\frac{5}{8}$ " thickness. It meets or exceeds minimum Federal Housing Authority standards, and can be applied directly to studs, as can the majority of U. S. Plywood's many other siding materials.

GEORGIA-PACIFIC

A 1961 forest products catalog in color, actually a series of four color booklets, has just been published by Georgia-Pacific Corp. for free distribution to the trade.

The four sections, available separately or as a group, are:

(1) Decorative Paneling: covers hardwoods and softwoods, domestic and imports, factory finished, architecturally matched hardwoods, textured paneling in both domestic and imported, factory finished moldings and specialty grade paneling.

(2) Siding, Fir Paneling, Sheathing, and Combination Subfloor-underlayment: includes factory-sealed redwood, overlaid GPX plywood, brushed, striated, factory coated, texture 1-11 and an expanded va-

riety of sizes, styles and textures in many items.

(3) Overlaid and Standard Fir Plywoods: includes residential, commercial, industrial and marine types, textured, factory coated and many variations in face and back veneers and treatments, sizes and thicknesses.

(4) Hardboards: covers standard and specialty items, factory sealed, perforated, cabinet panels, underlayment, channel and square scored, random plank, storage wall liner, tempered, pigment sealed, panel and lap siding, laminated, ribbed and corrugated in varied sizes and thicknesses.

The four, which will be included in the 1961 Sweet's files, may be ordered separately or as a group without charge by dealers, architects, builders, interior decorators, woodworkers and others working with forest products by writing Dept. 6-60-11, Georgia-Pacific Corp., Equitable Bldg., Portland 4, Ore.

THERMO-FAX

A free "Guide for Reproducing Federal Tax Returns" in any Thermo-Fax Copying Machine is available by writing Dept. L1-24, Minnesota Mining and Manufacturing Co., St. Paul 6, Minnesota.

The booklet includes a reference table which indicates correct size, type and color of Thermo-Fax Copy Paper to be used for making copies of individual tax forms. Also included is a list of important rules and hints to follow when preparing dry copy tax returns for filing. States which authorize reproductions of tax returns also are named.

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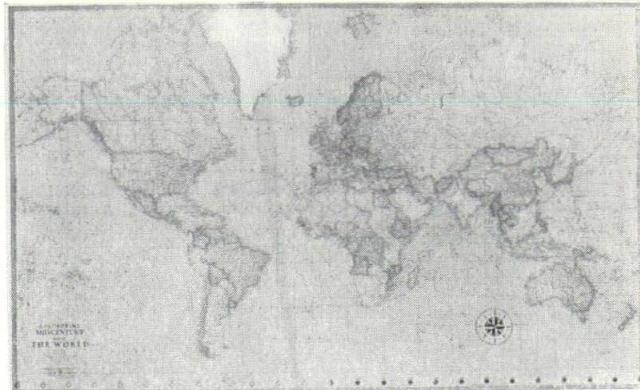
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NEW COLORPRINT WALL MAP MURALS COMBINE EDUCATIONAL AND DECORATIVE BENEFITS

A creative innovation that adds educational advantages to a practical, inexpensive decoration for school walls, Colorprint's new Map Murals of the World, in full color, are developed and made especially for wallcovering use by the American Map Company, N. Y.



Printed on heavy stock with waterproof inks, these up-to-date and highly detailed maps provide attractive highlights in corridors, offices and other wall areas in and out of the classroom.

Colorprint Map Murals are available in 4 sizes: 112" w x 69" h, 86" w x 54" h, 64" w x 42" h, and 50" w x 38" h. The maps are identical except for size and scale, and are shipped rolled on a tube to prevent creasing. They are easy to put up, using standard wallpapering methods.

Complete price and delivery information on Colorprint's Mural Maps of the World available from American Map Company, Inc., 3 W. 61st Street, New York 23.

ACRYLIC OVERLAID PLYWOOD



An unusual gleaming white fascia, utilizing a new type of plywood, extends more than a quarter mile around the top of this just-completed \$8,000,000 Memorial Coliseum building in Portland, Oregon. It is the first major application of its type. Designed by the internationally-known Architects Skidmore, Owings & Merrill, the structure is 90 feet high and 360 feet square, featuring the new acrylic overlaid plywood and grey tinted glass on the exterior. The new plywood building material, supplied by U. S. Plywood and Georgia-Pacific, withstands all types of weather and comes in several permanent colors for uses ranging from curtain walls to highway signs.

UNIFORM BUILDING CODE ADOPTS PRESTRESSED CONCRETE

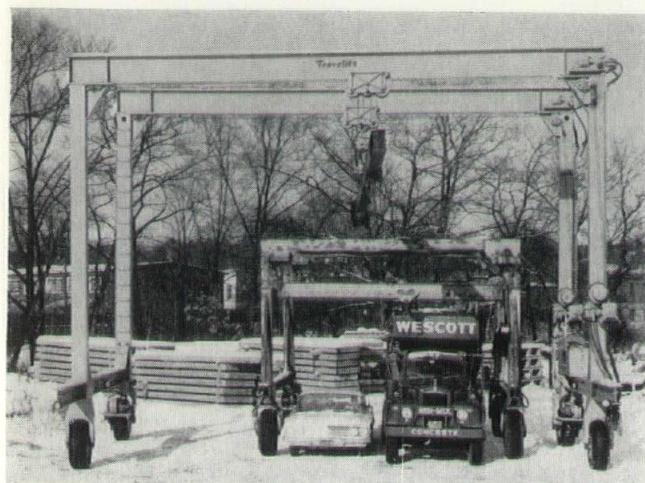
The International Conference of Building Officials has formally approved the inclusion of prestressed concrete into the Uniform Building Code, one of the four model codes used in the United States. Norman Scott, executive secretary, Prestressed Concrete Institute, Chicago, announced recently.

The Provisions of Code relating to prestressed concrete construction were first approved by the Structural Engineers Association of California and were formally adopted for inclusion in the Uniform Building Code by the International Conference of Building Officials at their recent convention in Colorado Springs, Colorado.

The approval was based on a reason simply stated by the Conference that "prestressed concrete method of design provides adequate safety based on procedures to be included in the Uniform Building Code Standards, Volume 3."

STRUCTURAL CONCRETE CORP.

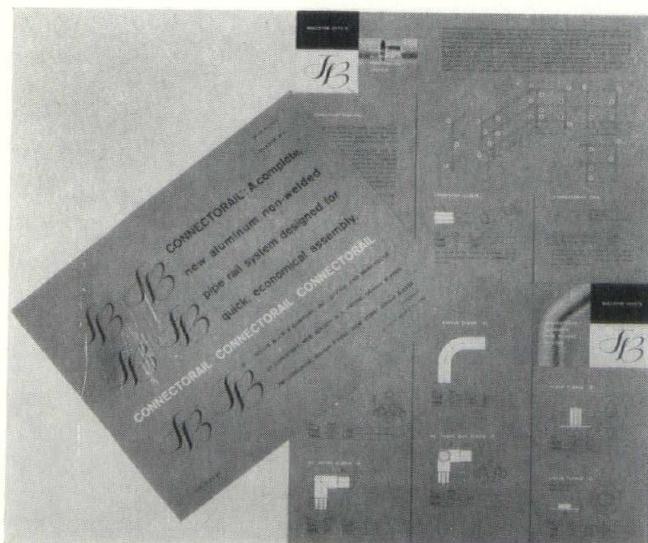
Structural Concrete Corporation, Laconia, New Hampshire, acquired a twenty-five ton Traveling Gantry Crane at its Franklin plant for handling Prestressed Concrete Girders and is reported to be the largest of its type in Northern New England.



The photograph shows the relative size of the new 25 ton Traveling Crane as it dwarfs its predecessor, a 12 ton Traveling Crane, a 7 cubic yard Mack Redi-Mix truck and a Chevrolet automobile. This new Gantry Crane, manufactured by the Travelfit and Engineering Company of Sturgeon Bay, Wisconsin, is propelled by hydraulic motors in each drive wheel and uses hydraulic winches for handling its heavy loads. The over-all dimensions of this new Traveling Gantry Crane are 40' in width, 25' in length and has the approximate height of a three-story building. The same type of equipment is now being used by the Railroads Piggy Back Service for handling truck trailers from the ground to railroad flat cars.

BOOKLET DESCRIBES NEW NON-WELDED PIPE RAIL SYSTEM

Connectorail Bulletin No. 0111, now available from Julius Blum & Co., describes and illustrates a complete new aluminum non-welded, flush-fitting pipe rail system designed for quick,

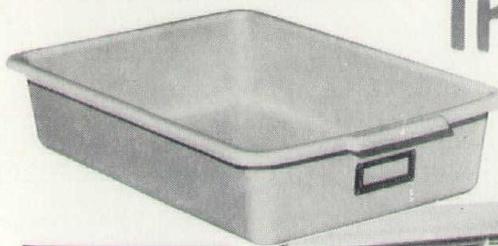


economical assembly and for perfect color match when aluminized. Detail drawings, dimensions and assembly data are furnished for all components of the system, including pipe, connector sleeves, tees, elbows, flanges, brackets, and other fittings. Also included is an angle fitting selector chart, which shows recommended angles for each tread-to-riser ratio, and angle tee templates for use in locating holes for joining angle tees of both 1 1/4- and 1 1/2-inch pipe. Keyed elevation drawings illustrate typical use of the various components. 6 pp., Julius Blum & Co., Inc., Carlstadt, New Jersey.

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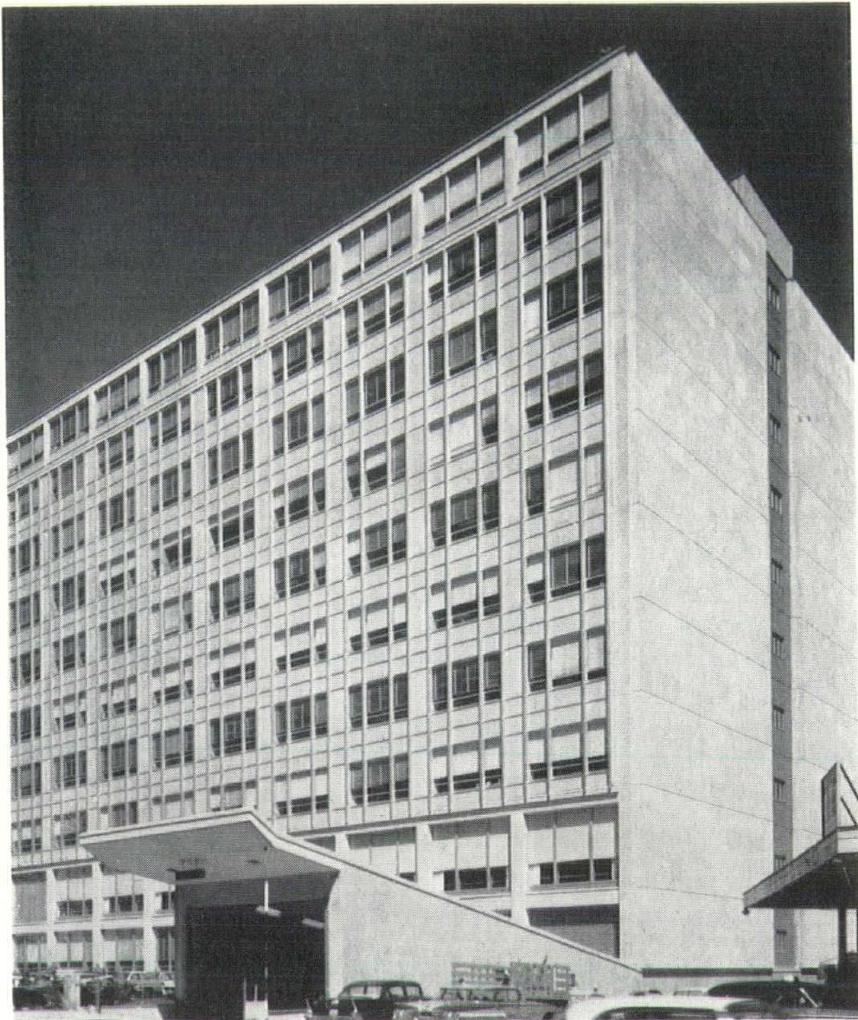
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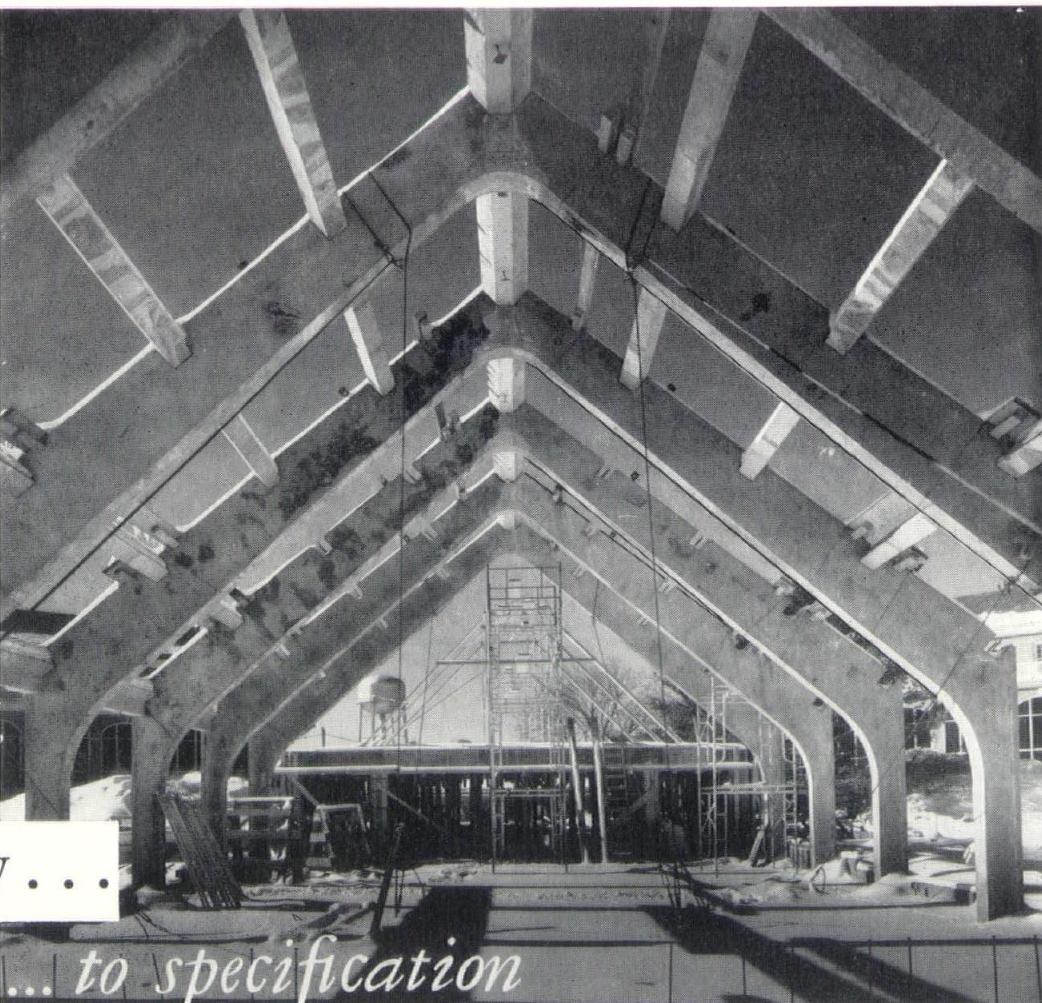
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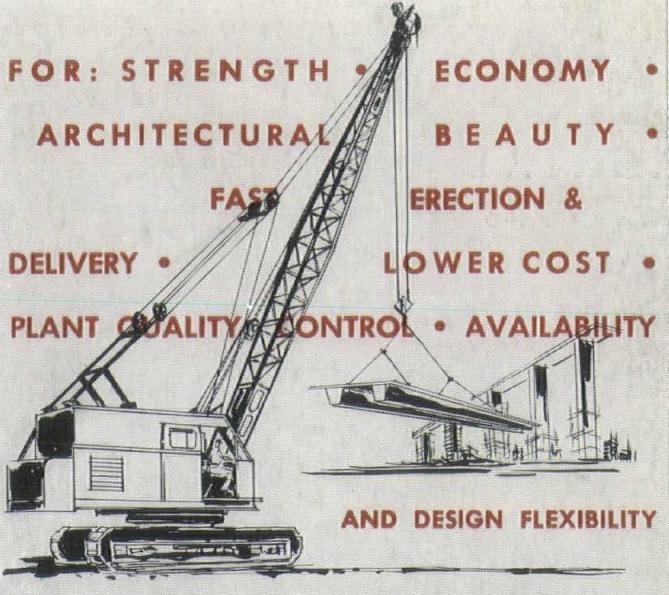
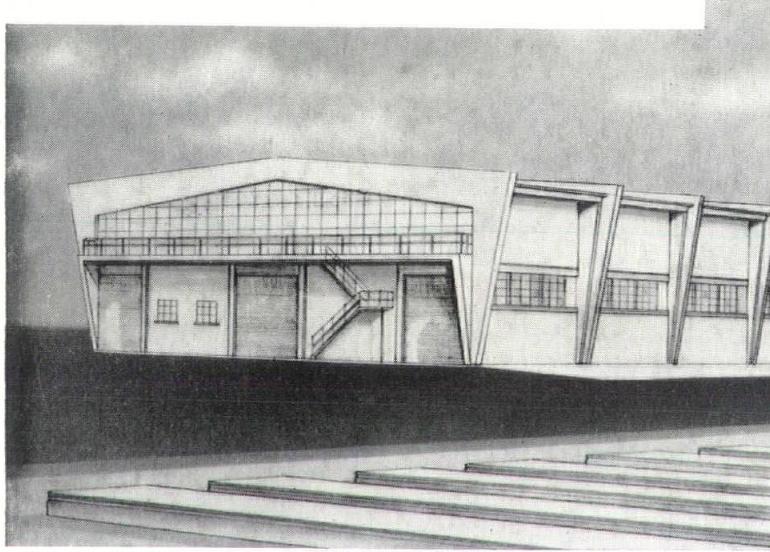
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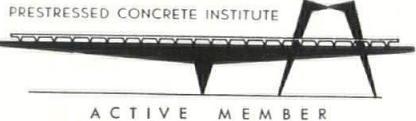
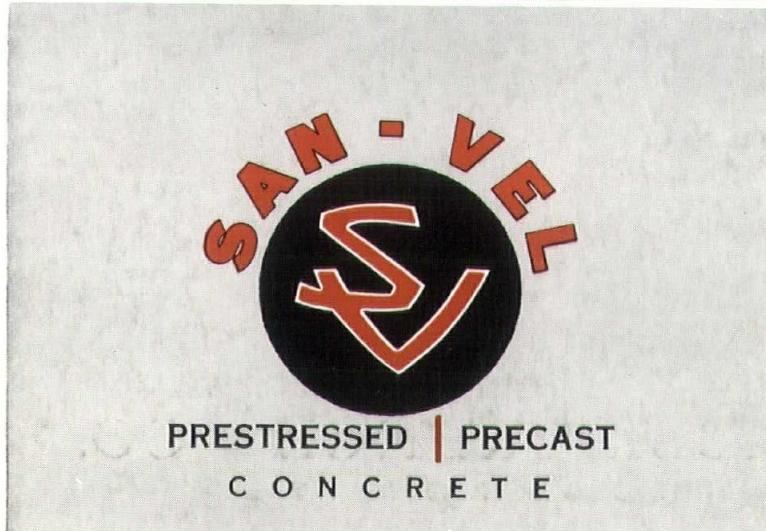
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